

**LAND-BASED DISCHARGE
ENVIRONMENTAL ASSESSMENT
AT
BEALE AIR FORCE BASE, CALIFORNIA

FINAL**

**Beale Air Force Base
Environmental Flight
6601 B Street
Beale Air Force Base, CA 95903-1712**

SEPTEMBER 2009

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**FINDING OF NO SIGNIFICANT IMPACT
AND
FINDING OF NO PRACTICABLE ALTERNATIVE**

NAME OF THE PROPOSED ACTION: Land-Based Discharge at Beale Air Force Base (AFB), California

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES: Beale AFB is proposing to construct a new 60-acre wastewater irrigation field across J Street from the wastewater treatment plant (WWTP). The 60-acre irrigation field would contain a total of six additional wastewater cannons on two parcels to discharge WWTP effluent. Parcel A would be approximately 35 acres and contain four of the wastewater cannons, while Parcel B would be approximately 24 acres and contain two of the wastewater cannons. This project would also include the construction of 3-foot-wide, 1-foot-high earthen berms around the perimeter of both parcels that would be constructed of on-site soil. The berms would be constructed to prevent treated wastewater from flowing off-site in the event of a wastewater cannon or piping system malfunction. The berms would act as a tail-water recovery system, which will be a requirement listed in the new Waste Discharge Requirements(WDR) from the California Regional Water Quality Control Board (CRWQCB). Additionally, Site 13 treated groundwater would be routed straight to the golf course via existing piping instead of being sent to the WWTP and to Pond 4.

Other sites were considered for the LBD project, but the proposed site is the only site that would avoid direct impacts to wetlands that are potential threatened and endangered species habitat. Additionally, other considered sites involved moving farther away from the WWTP and as such, would entail more impacts to Waters of the U.S. because of the large number of these features within the installation. The pump at Pond 4 where the piping must connect is in the 100-year and 500-year floodplain, so the project would involve construction in a floodplain with any site chosen.

Under the No Action Alternative, Beale AFB would continue to use the existing 40-acre wastewater irrigation field. Site 13 treated groundwater would continue to be routed to the WWTP and on to Pond 4. Once the new WDRs are issued in 2009, irrigation of the golf course with WWTP effluent would cease and the golf course would no longer have a source of irrigation water. Above-average rainfall could cause Pond 4 to fill to capacity prior to the end of the rainy season. Beale AFB would be forced to discharge to Hutchinson Creek, violating new WDRs.

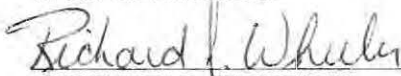
SUMMARY OF ENVIRONMENTAL CONSEQUENCES. The public and agency scoping process focused the analysis on the following environmental resources: Air Quality, Biological Resources, Water Resources, Safety and Military Munitions Response Program. Details of the environmental consequences can be found in the Environmental Assessment which is hereby incorporated by reference. A summary of the analyses is presented in the Executive Summary. The Environmental Assessment was published in the Marysville Appeal-Democrat as well as the Beale AFB Public

Affairs electronic publication and issued for a 30-day public comment period from 14 August 2009 to 12 September 2009. No comments were received. No significant impacts on the environment would be anticipated from the Proposed Action in conjunction with the construction of a new 60-acre wastewater irrigation field from the WWTP.

CONCLUSION:

Finding of No Significant Impact: Based on the information and analysis presented in the Environmental Assessment conducted in accordance with the requirements of the National Environmental Policy Act, the Council on Environmental Quality Regulations, and implementing regulations set forth in 32 CFR 989 (Environmental Impact Analysis Process), as amended, and review of the public and agency comments submitted during the 30-day public comment period, I conclude that implementation of the proposed action would not result in significant impacts to the quality of the human or natural environment. For these reasons, a finding of no significant impact is made and preparation an Environmental Impact Statement (EIS) is not warranted.

Finding of No Practicable Alternative: Pursuant to Executive Order 11988 and the authority delegated by Secretary of the Air Force Order 791.1, and taking into account the information above as well as the analysis presented in the Environmental Assessment which is incorporated by reference, I find that there is no practicable alternative to this action and that the Proposed Action includes all practicable measures to minimize harm to the environment.



RICHARD J. WHEELER
Colonel, USAF

Deputy Director of Installations and Mission Support (A7)

28 Sep 09
DATE

Executive Summary

ES.1 Project Background

Beale Air Force Base (AFB) is a U.S. Air Force (USAF) base under the Air Combat Command (ACC). Beale AFB is headquarters to the 9th Reconnaissance Wing (9 RW) that is responsible for providing national and theater command authorities with timely, reliable, high-quality, high-altitude reconnaissance products. To accomplish this mission, 9 RW is equipped with a fleet of U-2 and Global Hawk reconnaissance aircraft and associated support equipment. The wing maintains a high state of readiness in its combat support and combat service support forces for potential deployment in response to theater contingencies. The 9 RW also provides support for Beale AFB, ranging from financial, personnel, housing, maintenance, legal, recreational, and medical needs to fire protection, chaplain services, and Base security.

Beale AFB is a 22,944-acre military installation in Yuba County, California, approximately 40 miles north of Sacramento, 13 miles east of Marysville, and 25 miles west of Grass Valley (see Figure 1-1). The base is between the Yuba and Bear Rivers in an area characterized by the transition from the western Sacramento Valley east to the Sierra Nevada foothills.

ES.2 Purpose of and Need for the Proposed Action

The purpose of the Land-Based Discharge (LBD) project is to create a 60-acre wastewater irrigation field (Parcel A=35 acres and Parcel B=24 acres, Figure 2-2) in order to comply with new Waste Discharge Requirements (WDR) to be issued by the California Regional Water Quality Board (CRWQB) in 2009. The 60-acre irrigation field would increase the amount of effluent from Beale AFB's wastewater treatment plant (WWTP) that can be land-based. Beale AFB currently has a limited capacity to discharge its wastewater treatment plant (WWTP) effluent to land.

Beale AFB also proposes to eliminate the WWTP effluent sent to the golf course for irrigation, replacing it with Environmental Restoration Program (ERP) Site 13 treated groundwater in order to comply with the new WDRs to be issued in 2009. A significant source of influent flow to the WWTP is treated groundwater from ERP Site 13's groundwater treatment plant, which is adjacent to the WWTP. With Site 13 effluent no longer being routed to Pond 4 (Beale AFB's waste water holding pond located across the street from the WWTP, Figure 2-2), the pond would have a larger capacity to hold WWTP effluent and rainwater.

In order to meet new WDRs, Beale AFB must eliminate any potential for discharge to Hutchinson Creek. Potential discharges could occur if a heavy rainfall event or cumulative rainfall amounts occur where Pond 4 becomes too full to accommodate any more WWTP effluent. If heavy rains during the winter cause too much WWTP effluent to collect in Pond 4, then Pond 4 may become full before the winter rains cease. This

situation would force Beale AFB to discharge to Hutchinson Creek, violating the new WDRs.

A water balance completed in 2009 (BAFB 2009) studied the WWTP inflow and outflow and calculated the capacity to store and discharge effluent. The results of the water balance indicate a new 60-acre sprayfield as well as routing Site 13 groundwater straight to the golf course instead of into Pond 4 would eliminate any potential to have to discharge to Hutchinson Creek.

ES.3 Proposed Action and No Action Alternative

ES.3.1 Proposed Project

The LBD project is to construct a new 60-acre wastewater irrigation field across J Street from the WWTP (Figures 2-1 and 2-2). The 60-acre irrigation field would contain a total of six additional wastewater cannons on two parcels to discharge WWTP effluent. Parcel A would be approximately 35 acres and contain four of the wastewater cannons, while Parcel B would be approximately 24 acres and contain two of the wastewater cannons. This project would also include the construction of 3-foot-wide, 1-foot-high earthen berms around the perimeter of both parcels that would be constructed of on-site soil. The berms would be constructed to prevent treated wastewater from flowing off-site in the event of a wastewater cannon or piping system malfunction. The berms would act as a tail-water recovery system, which will be a requirement listed in the new WDRs from the CRWQCB.

Additionally, Site 13 treated groundwater would be routed straight to the golf course via existing piping instead of being sent to the WWTP and to Pond 4.

ES.3.2 No Action Alternative

Under the No Action Alternative, Beale AFB would continue to use the existing 40-acre wastewater irrigation field. Site 13 treated groundwater would continue to be routed to the WWTP and on to Pond 4. Once the new WDRs are issued in 2009, irrigation of the golf course with WWTP effluent would cease and the golf course would no longer have a source of irrigation water. Above-average rainfall could cause Pond 4 to fill to capacity prior to the end of the rainy season. Beale AFB would be forced to discharge to Hutchinson Creek, violating new WDRs.

ES.4 Summary of Environmental Effects

Air Quality. Combustive emissions from construction equipment would be generated during construction. Fugitive dust would be generated from ground-disturbing activities such as site clearing, grading, and vehicular traffic moving over the disturbed site. Emissions from construction would not exceed the Feather River Air Quality Management District's thresholds of significance; therefore, these effects would not be

significant. Since the base is located in an unclassified/attainment area for criteria pollutants identified by the Environmental Protection Agency, no formal conformity analysis is required.

Biological Resources. Seasonal wetlands occur near the project site, some of which have the potential to support federally protected vernal pool invertebrates. No wetlands would be directly or indirectly impacted by the proposed project. Marginal habitat for the federally protected giant garter snake occurs in nearby Hutchinson Creek. Beale AFB received concurrence on informal consultation with the U.S Fish and Wildlife Service (USFWS) on 7 January 2009. The USFWS agreed with Beale AFB's determination that this project is not likely to adversely affect any special status species. No significant direct or indirect effects on special-status species or their habitat would result from implementation of the proposed action. Beale AFB's Environmental Protection Measures identified in Table 2-3 and agreed upon by the USFWS would be followed to minimize the potential for effects.

Water Resources. 0.0169 acres of temporary impacts to jurisdictional Waters of the U.S. (WoUS) would occur as part of this project. A Section 401 Clean Water Act (CWA) Water Quality Certification was received by the CRWQCB on 11 February 2009. Additionally, the resulting impacts fall below the preconstruction notification criteria under the Section 404 CWA Nationwide Permit.

Implementation of the Proposed Action would not be expected to have direct or indirect adverse effects on water quality. Land application of effluent would occur with the same restrictions currently in place for land application. The effluent would meet WDRs prescribed by the CRWQCB.

The Proposed Action has the potential to impact approximately 60 acres of 100 and 500 year floodplains. Any expansion of the floodplain due to the proposed action would likely be local and would occur in an isolated area where no structures are present. Any effect on the floodplain would also be of short duration because Beale AFB is at a higher elevation than the surrounding area.

No significant direct or indirect effects on water resources would result from implementation of the proposed action. Beale AFB's Environmental Protection Measures identified in Table 2-3 would be followed to minimize the potential for effects.

Safety and MMRP. Historically, portions of Beale AFB have been used as gunnery ranges which could harbor unexploded ordinance (UXO) or chemical agents. Areas of the project with intrusive work planned have been determined by the Beale Safety Office to have a low risk of encountering munitions and explosives of concern (MEC).

Before any intrusive work begins, contractors would be required to establish and maintain safety programs and appropriate safeguards and to comply with the Environmental Protection Measures (Table 2-3) for MMRP for the benefit of workers, base personnel and the public. Doing so would reduce adverse impacts to less than significant.

ES.5 Cumulative Impacts

Table 5-1 summarizes potential cumulative effects on resources from the Proposed Action, when combined with other past, present, and future activities. No significant impacts on the environment would be anticipated from the Proposed Action in conjunction with these activities.

ABBREVIATIONS AND ACRONYMS

9 RW	9th Reconnaissance Wing
ACC	Air Combat Command
AFB	Air Force Base
AFI	Air Force Instruction
AOC	Area of Concern
AQCR	Air Quality Control Region
BAFB	Beale Air Force Base
bgs	below ground surface
CCR	California Code of Regulations
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAIS	Chemical Agent Identification Sets
CARB	California Air Resources Board
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
CNDDB	California National Diversity Database
CO	carbon monoxide
CRWQCB	California Regional Water Quality Control Board
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EQD	Explosive Quantity Distance
ERP	Environmental Restoration Program
ESS	Explosive Safety Submission
ft ²	square feet
FIP	Federal Implementation Plan
FRAQMD	Feather River Air Quality Management District
INRMP	Integrated Natural Resources Management Plan
LiDAR	light detection and ranging
MMRP	Military Munitions Response Program
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NLAA	Not Likely to Adversely Affect
NO ₂	nitrogen dioxide
NO _x	nitrogen oxide(s)
NPDES	National Pollutant Discharge Elimination System
O ₃	ozone
OSHA	Occupational Safety and Health Administration
P.L.	Public Law
PM ₁₀	particulate matter less than or equal to 10 microns in diameter
PM _{2.5}	particulate matter less than or equal to 2.5 microns in diameter
ROG	Reactive Organic Gases
SE	Wing Safety
SFS	Security Forces Squadron
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SO ₂	sulfur dioxide
U.S.C.	United States Code
USACE	U.S. Army Corps of Engineers
USAF	U.S. Air Force
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service

UXO	unexploded ordnance
WDR	Waste Discharge Requirements
WWTP	Wastewater Treatment Plant

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1 Introduction

1.1 Background

Beale Air Force Base (AFB) is a U.S. Air Force (USAF) base under the Air Combat Command (ACC). Beale AFB is headquarters to the 9th Reconnaissance Wing (9 RW) that is responsible for providing national and theater command authorities with timely, reliable, high-quality, high-altitude reconnaissance products. To accomplish this mission, 9 RW is equipped with a fleet of U-2 and Global Hawk reconnaissance aircraft and associated support equipment. The wing maintains a high state of readiness in its combat support and combat service support forces for potential deployment in response to theater contingencies. The 9 RW also provides support for Beale AFB, ranging from financial, personnel, housing, maintenance, legal, recreational, and medical needs to fire protection, chaplain services, and base security.

Beale AFB is a 22,944-acre military installation in Yuba County, California, approximately 40 miles north of Sacramento, 13 miles east of Marysville, and 25 miles west of Grass Valley (Figure 1-1). The base is between the Yuba and Bear Rivers in an area characterized by the transition from the western Sacramento Valley east to the Sierra Nevada foothills.

1.2 Purpose and Need

The purpose of the Land-Based Discharge (LBD) project is to create a 60-acre wastewater irrigation field (Parcel A=35 acres and Parcel B=24 acres, Figure 2-2) in order to comply with new Waste Discharge Requirements (WDR) to be issued by the California Regional Water Quality Board (CRWQB) in 2009. The 60-acre irrigation field would increase the amount of effluent from Beale AFB's wastewater treatment plant (WWTP) that can be land-based. Beale AFB currently has a limited capacity to discharge its wastewater treatment plant (WWTP) effluent to land.

There are seven wastewater cannons in use at the existing 40-acre irrigation field south of the WWTP (Figure 2-2) that discharge effluent to land. The only other area where effluent is currently discharged to land is at the golf course, which is a restricted access area. Beale AFB Waste Discharge Order # R5-2004-0045 states that the base cannot irrigate the golf course with WWTP effluent while golfers are present. This limits the amount of effluent that can be land-based at the golf course as the only time irrigation can occur without golfers present is nighttime. Additionally, Beale AFB is planning to eliminate the WWTP effluent sent to the golf course for irrigation, replacing it with Environmental Restoration Program (ERP) Site 13 treated groundwater in order to comply with the new WDRs to be issued in 2009.

A significant source of influent flow to the WWTP is treated groundwater from ERP Site 13's groundwater treatment plant, which is adjacent to the WWTP. Contaminated groundwater from Site 13 is treated by an air stripping process to remove trichloroethane (TCE) and other chlorinated hydrocarbons. In order to eliminate restrictions on irrigating at the golf course, Beale AFB would route treated groundwater from Site 13 to serve as the sole source of effluent to land-base at the golf course. The Site 13 treated

groundwater meets standards prescribed in California Code of Regulations (CCR) Title 22, Division 4, Chapter 3, Article 3 for recycling treated wastewater and could be used at the golf course with no restrictions. With Site 13 effluent no longer being routed to Pond 4 (Beale AFB's waste water holding pond located across the street from the WWTP, Figure 2-2), the pond would have a larger capacity to hold WWTP effluent and rainwater. Additionally, using only Site 13 treated groundwater to irrigate the golf course would eliminate wastewater sampling requirements and associated compliance issues at the golf course wastewater holding pond, A St. Pond.

A Cease and Desist Order (Order Number R5-2004-0046) was issued by the CRWQCB in 2004 that states requirements for Beale to cease any discharge to Hutchinson Creek because of new effluent limitations that Beale AFB's WWTP plant cannot meet without being upgraded to tertiary treatment. The order states that Beale AFB has until April 2009 to meet new effluent limitations. A new order issued in 2009 (Order Number RS-2009-0060) rescinds the 2004 order, thereby eliminating Beale AFB's National Pollutant Discharge Elimination System permit to discharge to Hutchinson Creek. According to this order, Beale AFB may operate under its old WDRs until the new WDRs are approved in 2009. The only time Beale AFB has needed to discharge to Hutchinson Creek was after heavy rainfall in 2006. Pond 4 became too full to accommodate any additional WWTP effluent and the cannons could not be operated. WDR No. R5-2004-0045, the WDRs that Beale AFB is currently operating under, states that land application of effluent cannot occur 24 hours before or after a rain event, during a rain event, or when the ground is saturated. Beale AFB's new WDRs will contain the same restrictions on land application of effluent.

In order to meet new WDRs, Beale AFB must eliminate any potential for discharge to Hutchinson Creek. Potential discharges could occur if a heavy rainfall event or cumulative rainfall amounts occur where Pond 4 becomes too full to accommodate any additional WWTP effluent. At Beale AFB, rainfall occurs during the late fall/winter and ceases during the summer. Beale AFB's goal is to completely empty Pond 4 by November, when winter rains typically begin. After Pond 4 becomes full with winter rains and WWTP effluent stored during the winter (typically around April), Beale AFB begins to operate its wastewater cannons to land-base the effluent collected during the winter. If heavy rains during the winter cause too much WWTP effluent to collect in Pond 4, then Pond 4 may become full before the winter rains cease. This situation would force Beale AFB to discharge to Hutchinson Creek, violating the new WDRs.

Rainfall in 2006, when Beale AFB had the need to discharge to Hutchinson Creek, totaled 26.27 inches. The average rainfall at Beale AFB is 21.04 inches compared to a 100-year annual rainfall of 39.33 inches. Thus only about 5 inches above the average rainfall could initiate the need to have to discharge to Hutchinson Creek. Even smaller rainfall amounts could also create a situation where discharge to Hutchinson Creek may be necessary. If rainfall occurs slightly above average during one rainy season such that Pond 4 cannot be emptied fully prior to the start of the next rainy season, then the next

rainy season may fill up Pond 4 to capacity even if only average rainfall amounts are seen.

A water balance completed in 2009 (BAFB 2009) studied the WWTP inflow and outflow and calculated the capacity to store and discharge effluent. The results of the water balance indicate a new 60-acre sprayfield as well as routing Site 13 groundwater straight to the golf course instead of into Pond 4 would eliminate any potential to have to discharge to Hutchinson Creek.



VICINITY MAP



REGIONAL MAP



BEALE AIR FORCE BASE

Figure 1-1

1.3 Scoping and Public Involvement Summary

The following resources were identified as having the potential of being impacted:

- Air Quality
- Biological Resources
- Water Resources
- Safety and Military Munitions Response Program (MMRP)

Public involvement included the release of the Draft Environmental Assessment (EA) for a 30-day public comment period, announced in the local newspaper, the Marysville Appeal-Democrat, and the Beale AFB electronic publication.

1.4 Permit and Consultation Requirements

Concurrence was received on 7 January 2009 on informal consultation with the U.S Fish and Wildlife Service (USFWS). The USFWS agreed with Beale AFB's determination that this project is not likely to adversely affect any special status species (Appendix B).

A Section 401 Clean Water Act (CWA) Water Quality Certification was received by the CRWQCB on 11 February 2009. The impacts would be below the notification criteria of 0.10 acres for a Section 404 CWA Nationwide Permit 12, Utility Line Activities (Appendix C)

1.5 Purpose of the Environmental Assessment

The objective of this EA is to disclose and analyze potentially significant environmental impacts expected from implementation of the Proposed Action. A secondary objective of this EA is to determine potential cumulative impacts from the Proposed Action to air quality, biological resources, water resources, and safety and military munitions response program. This EA will discuss direct, indirect, permanent, and temporary impacts at or near project sites to resource areas including wetlands, waters of the U.S., and threatened and endangered species and their habitat.

This EA has been prepared to satisfy the requirements of NEPA (Public Law [P.L.] 91-190, Title 42; United States Code [U.S.C.], Section 4321 et seq., as amended). NEPA legislated a structured approach to environmental impact analysis that requires Federal agencies to use an interdisciplinary and systematic approach in their decision-making process. This process evaluates potential environmental consequences associated with a proposed action and considers alternative courses of action. The intent of NEPA is to protect, restore, and enhance the environment through well-informed Federal decisions. In addition, this document has been prepared in accordance with Air Force Instruction (AFI) 32-7061, *Environmental Impact Analysis Process* (EIAP), as set forth in Title 32 Code of Federal Regulations (CFR) Part 989, which implements Section 102(2) of NEPA and regulations established by the Council on Environmental Quality (CEQ).

2 Proposed Action and Alternatives

This section describes the Proposed Action, discusses the No Action Alternative, and describes the alternatives considered but eliminated from further review.

2.1 Proposed Action

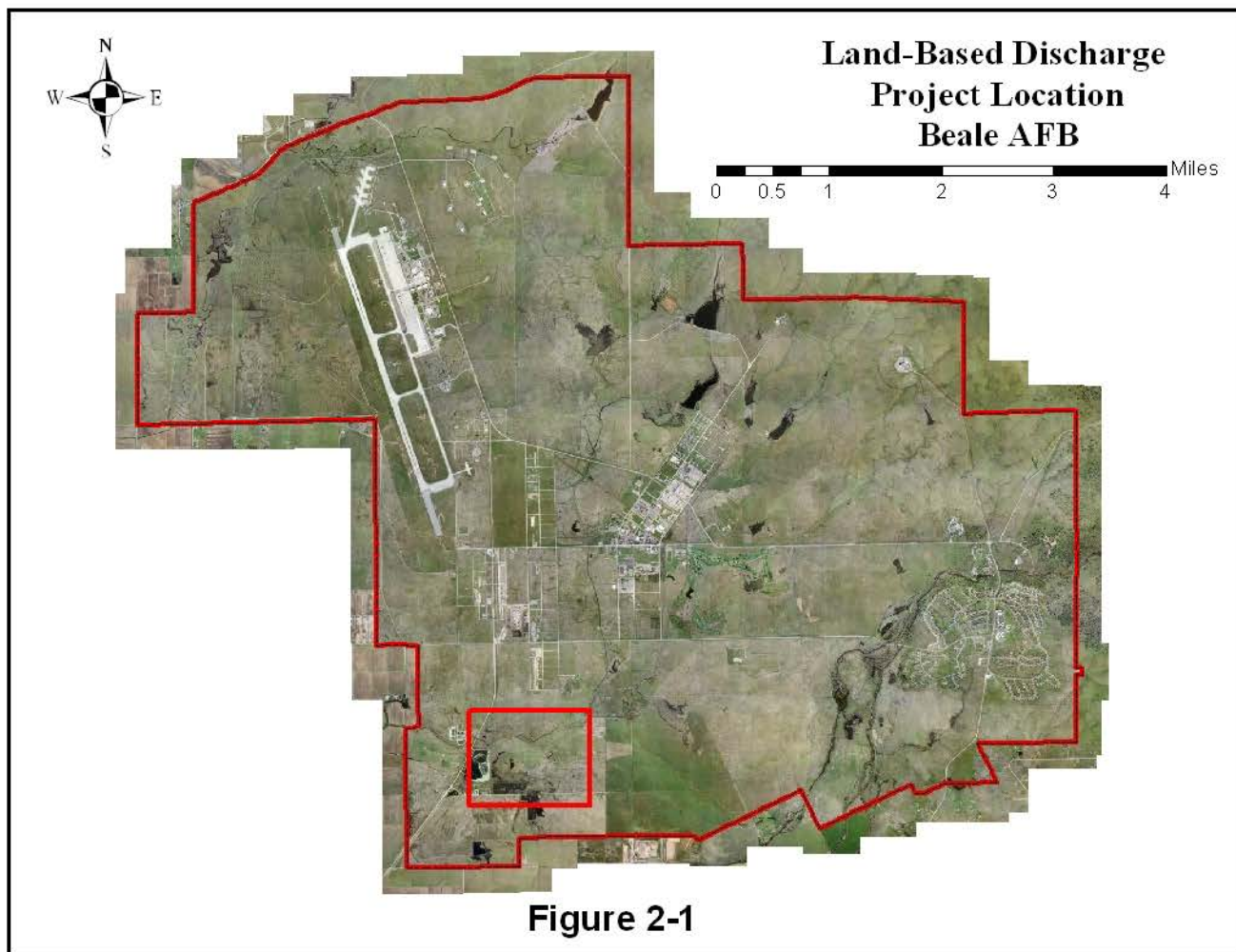
The LBD project is to construct a new 60-acre wastewater irrigation field across J Street from the WWTP (Figures 2-1 and 2-2). The 60-acre irrigation field would contain a total of six additional wastewater cannons on two parcels to discharge WWTP effluent. Parcel A would be approximately 35 acres and contain four of the wastewater cannons, while Parcel B would be approximately 24 acres and contain two of the wastewater cannons. This project would also include the construction of 3-foot-wide, 1-foot-high earthen berms around the perimeter of both parcels that would be constructed of on-site soil. The berms would be constructed to prevent treated wastewater from flowing off-site in the event of a wastewater cannon or piping system malfunction. The berms would act as a tail-water recovery system, which will be a requirement listed in the new WDRs from the CRWQCB.

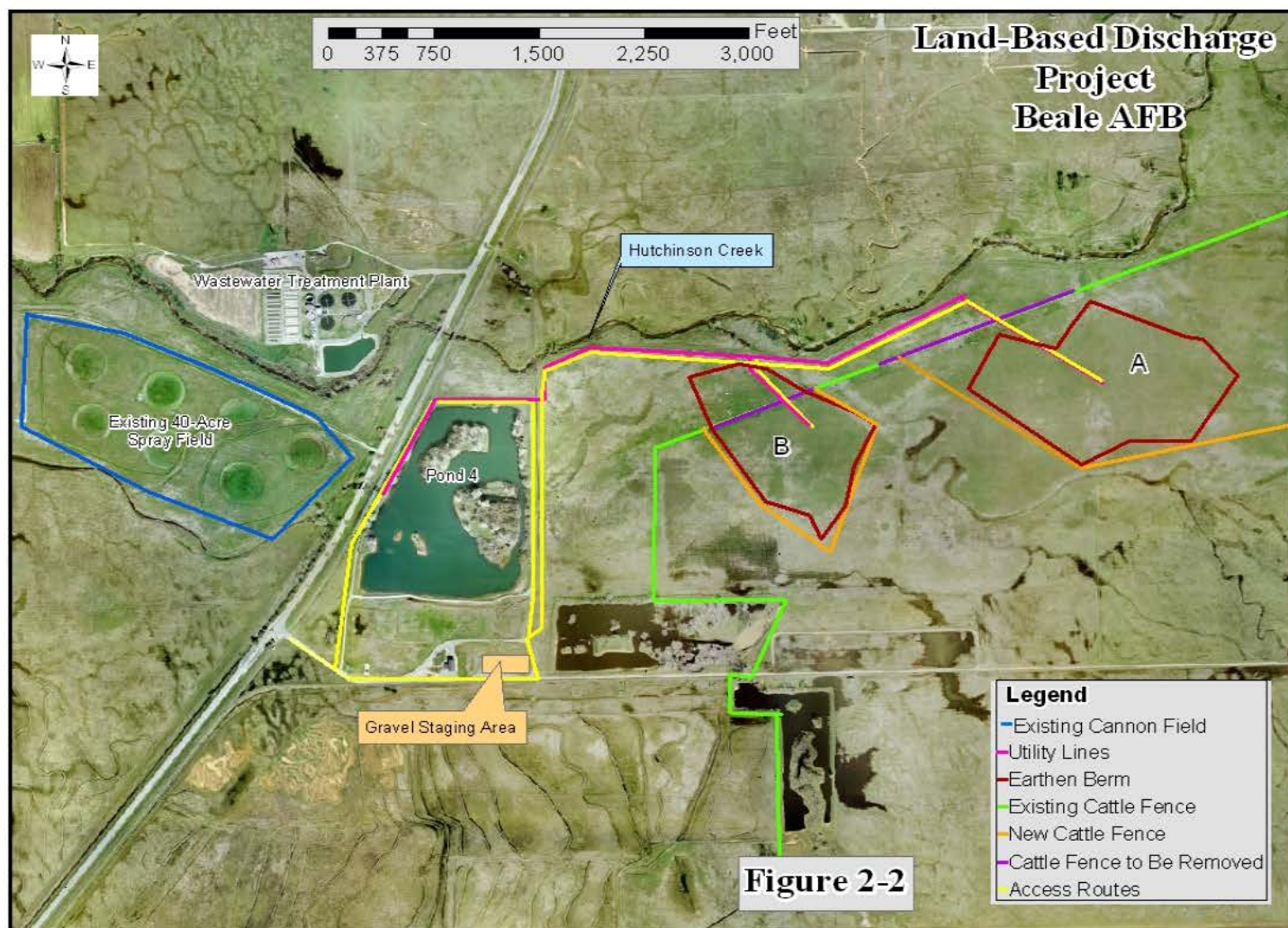
A water main and an electrical conduit would tap into existing utilities at the pump facility on the western side of Pond 4. The entire electrical conduit would be buried, except when it bridges a drainage ditch east of Pond 4. The water main would be entirely buried. A drain pit would be installed at the lowest point along the pipeline, within the drainage swale located in between the two parcels. The drain pit includes special design features to ensure that drained effluent does not enter Hutchinson Creek. The drain pit would consist of a pipe with a valve and a hose fixture. The hose fixture would allow maintenance crews to attach a hose and pump the residual water in the water main into a truck, or alternatively, inside one of the earthen berms to ensure the wastewater does not flow into Hutchinson Creek. The drain pit would be installed 3 feet below ground surface (bgs).

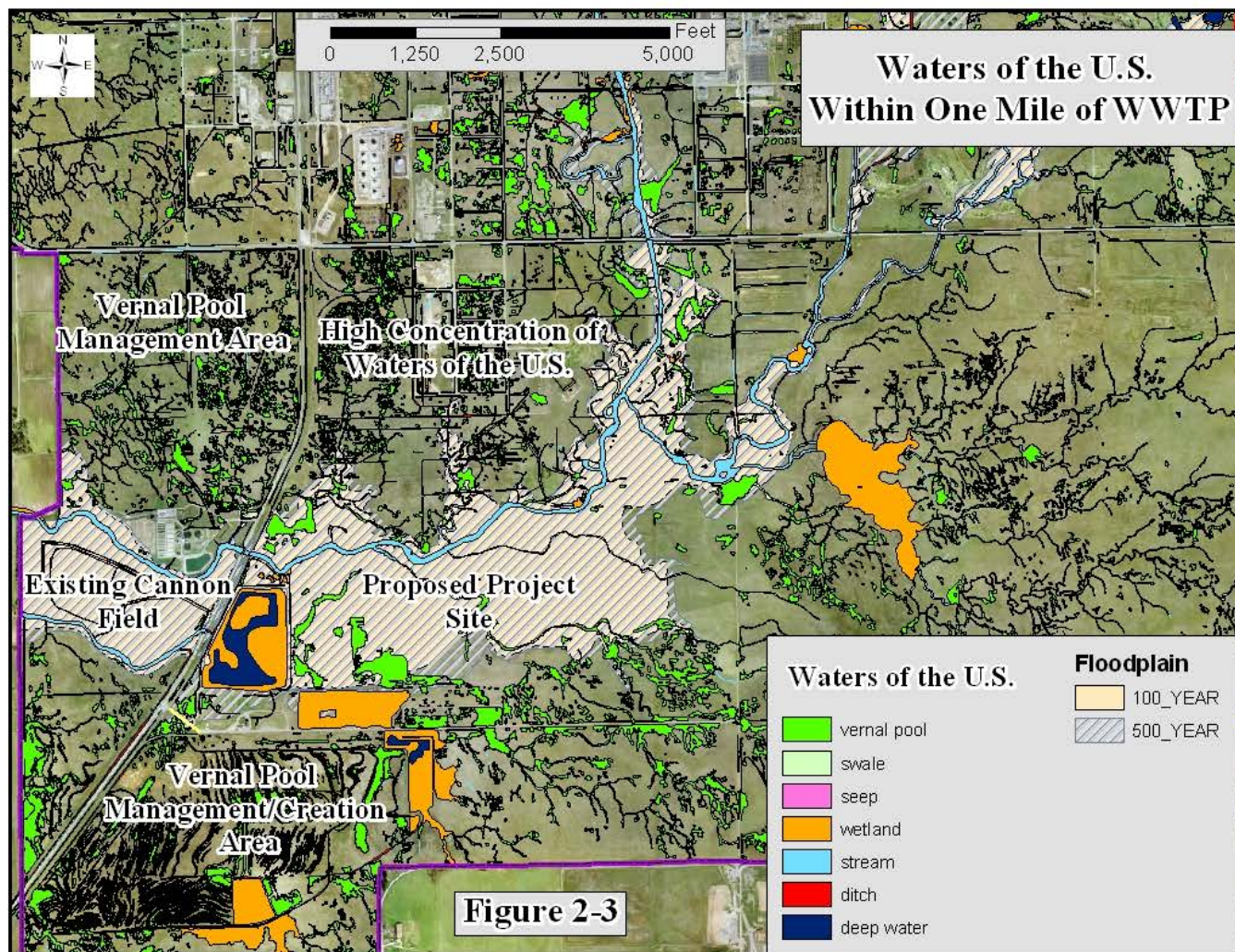
An existing cattle fence at the project site would be rerouted to exclude cattle from the cannon fields. The cattle fence would consist of metal T-posts, five-strand cattle wire, and a standard cattle gate with wooden posts. The wooden posts would be installed for the cattle gate and at all corners of the fence. The wood posts would be installed with hand tools and would not be more than 3 feet deep. Concrete surface anchors would be used to secure the T-posts within 25 ft. of wetlands or drainages to avoid soil disturbance. T-posts outside of the wetlands/drainages would be hand driven to one foot deep.

During construction, the project area would be accessed via the levee road surrounding Pond 4 and an existing dirt road. A staging area for storing equipment and materials would be set up on a gravel pad south of Pond 4 (Figure 2-2).

Additionally, Site 13 treated groundwater would be routed straight to the golf course via existing piping instead of being sent to the WWTP and to Pond 4.







2.2 No Action Alternative

Under the No Action Alternative, Beale AFB would continue to use the existing 40-acre wastewater irrigation field. Site 13 treated groundwater would continue to be routed to the WWTP and on to Pond 4. Once the new WDRs are issued in 2009, irrigation of the golf course with WWTP effluent would cease and the golf course would no longer have a source of irrigation water. Above-average rainfall could cause Pond 4 to fill to capacity prior to the end of the rainy season. Beale AFB would be forced to discharge to Hutchinson Creek, violating new WDRs.

2.3 Other Alternatives Considered, but not Carried Forward

2.3.1 Selection Criteria

The site for the new 60-acre irrigation field must meet several selection criteria:

- 1) The site must be within a reasonable distance from the WWTP (approximately one mile) in order to be financially practical. The further away the site is from the existing WWTP, additional expenses are accrued due to costs for additional piping, new pumps, etc., as well potential or likely costs that would arise due to necessary compensation for impacts to special status shrimp species.
- 2) The site must avoid direct impacts to wetlands, which include potential habitat for special status shrimp species.
- 3) The site must minimize impacts to non-wetland Waters of the U.S.

2.3.2 Other Alternatives Considered

Other sites at Beale were considered for the new 60-acre wastewater irrigation field. No other sites were identified that would meet the selection criteria. Direct impacts to wetlands could not be avoided at any site within one mile of the WWTP, other than the proposed site. These sites have high densities of wetland and non-wetland Waters of the U.S. and some are vernal pool management/creation areas (Figure 2-3). Additionally, soil types at other sites would have caused the land-based wastewater to pond quickly. This would greatly reduce the number of hours per day the wastewater cannons could be used per day.

Another alternative considered involved upgrading the existing WWTP to provide tertiary treatment. This would allow discharge to Hutchinson Creek if needed as well as unrestricted irrigation with WWTP effluent. However, the existing WWTP is so outdated that a new facility would have to be constructed. The high cost and extensive time needed to construct a new WWTP facility made this alternative infeasible for the near future to meet new WDRs.

Additionally, Beale AFB considered piping wastewater off-site for treatment at an off-base facility; however, no such facility with available capacity is present near Beale AFB.

2.4 Summary of Impacts and Environmental Protection Measures

Table 2-1 presents a summary of the environmental impacts that may result from implementation of the Proposed Action. Table 2-2 presents cumulative effects. Table 2-3 presents the Environmental Protection Measures that Beale AFB and their contractors would comply with to minimize or eliminate impacts to environmental resources.

Table 2-1. Summary of Environmental Impacts

Resource (Applicable Subchapter)	Proposed Action	No Action Alternative
Air Quality (Subchapter 4.1)	Combustive emissions from construction equipment would be generated during construction. Fugitive dust would be generated from ground-disturbing activities such as site clearing, grading, and vehicular traffic moving over the disturbed site. However, these effects would not be substantial.	No change from the baseline condition as described in Subchapter 3.1.
Biological Resources (Subchapter 4.2)	Seasonal wetlands occur near the Proposed Action area, some of which have the potential to support federally protected vernal pool invertebrates. No wetlands would be directly or indirectly impacted by the proposed project. Marginal habitat for the federally protected giant garter snake occurs in nearby Hutchinson Creek. Beale AFB received concurrence on information consultation with the U.S Fish and Wildlife Service (USFWS) on 7 January 2009. The USFWS agreed with Beale AFB's determination that this project is not likely to adversely affect any special status species. No significant direct or indirect effects on special-status species or their habitat would result from implementation of the proposed action. Beale AFBs Environmental Protection Measures identified in Table 2-3 and agreed upon by the USFWS would be followed to minimize the potential for effects.	No change from the baseline condition as described in Subchapter 3.2.
Water Resources (Subchapter 4.3)	0.0169 acres of temporary impacts to jurisdictional Waters of the U.S. (WoUS) would occur as part of this project. A Section 401 Clean Water Act (CWA) Water Quality Certification was received by the CRWQCB on 11 February 2009. The impacts are below	Once the new WDRs are issued in 2009, irrigation of the golf course with WWTP effluent would cease and the golf course would no longer have a source of irrigation water. Above-average rainfall could cause Pond 4 to fill to

Table 2-1. Summary of Environmental Impacts

Resource (Applicable Subchapter)	Proposed Action	No Action Alternative
	<p>the notification criteria for a Section 404 CWA Nationwide Permit.</p> <p>Implementation of the Proposed Action would not be expected to have direct or indirect adverse effects on water quality. Land application of effluent would occur with the same restrictions currently in place for land application. The effluent would meet Waste Discharge Requirements prescribed by the CRWQCB.</p> <p>The Proposed Action has the potential to impact approximately 60 acres of 100 and 500 year floodplains. Any expansion of the floodplain due to the proposed action would likely be local and would occur in an isolated area where no structures are present. Any effect on the floodplain would also be of short duration because Beale AFB is at a higher elevation than the surrounding area. The Proposed Action is not expected to adversely impact water resources at Beale AFB.</p> <p>No significant direct or indirect effects on special-status species or their habitat would result from implementation of the proposed action. Beale AFBs Environmental Protection Measures identified in Table 2-3 would be followed to minimize the potential for effects.</p>	<p>capacity prior to the end of the rainy season. Beale AFB would be forced to discharge to Hutchinson Creek, violating new WDRs.</p>
<p>Safety and Military Munitions Response Program (Subchapter 4.4)</p>	<p>Contractors would be required to establish and maintain safety programs. Projects associated with the Proposed Action would not be expected to pose a safety risk to base personnel or activities. During construction activities associated with the Proposed Action, construction crew workers would have a possibility of encountering unexploded ordnances or chemical agent identification sets. Contractors would be required to comply with the Environmental Protection Measures for the Military Munitions Response Program (Table 2-3), thereby reducing impacts to less than significant.</p>	<p>No change from the baseline condition as described in Subchapter 3.4.</p>

Table 2-1. Summary of Environmental Impacts

Resource (Applicable Subchapter)	Proposed Action	No Action Alternative
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AFB – Air Force Base

CRWQCB – Regional Water Quality Control Board

USFWS – United States Fish and Wildlife Service

Table 2-2. Cumulative Effects on Resources

Resource	Past Actions	Present Actions	Proposed Action	Known Future Actions	Cumulative Effects
Air Quality	Emissions from aircraft, vehicles, and stationary equipment. Potential dust generation during soil removal, site grading, and construction.	Potential dust generation during soil removal, site grading, and construction.	Potential dust generation during soil removal, site grading, and construction.	Potential dust generation during soil removal, site grading, and construction.	No formal conformity analysis required. Actions would be <i>de minimus</i> . Effect not significant.
Biological Resources	Degraded historic habitat of sensitive and common wildlife species. Minor disturbance of vegetation by construction. Direct and indirect effects on T&E species. Effects compensated through consultation with USFWS.	Minor disturbance of vegetation by construction. Not likely to adversely affect T&E species.	Minor disturbance of vegetation by construction. Not likely to adversely affect T&E species.	Minor disturbance of vegetation by construction. Direct and indirect effects on T&E species. Effects compensated through consultation with USFWS.	Permanent loss of vegetation and low quality habitat. Direct and indirect effects on T&E species. Effects compensated through consultation with USFWS. Effects not significant.
Safety and MMRP	Short-term effects on construction workers from construction activities. Projects occur on MMRP sites. Potential MEC is encountered.	Short-term effects on construction workers from construction activities. Projects occur on MMRP sites.	Short-term effects on construction workers from construction activities. Not located on identified MMRP site..	Short-term effects on construction workers from construction activities and potential MEC. Projects occur on MMRP sites.	Construction site health and safety plans and base safety/DDESB approval of construction projects on MMRP sites result in no significant effect.

Table 2-2. Cumulative Effects on Resources

Resource	Past Actions	Present Actions	Proposed Action	Known Future Actions	Cumulative Effects
Water Resources	<p>Surface water quality moderately impacted by development.</p> <p>CWA permits obtained for impacts to WoUS.</p>	<p>Surface water quality moderately impacted by development.</p> <p>CWA permits obtained for impacts to WoUS.</p>	<p>Potential sedimentation from construction activities.</p> <p>CWA permits obtained for impacts to WoUS.</p>	<p>Potential sedimentation from construction activities and minor increase in percentage of impervious surface area.</p> <p>CWA permits obtained for impacts to WoUS.</p>	<p>Use of best management practices and CWA permit approval results in negligible effects to water resources.</p> <p>Effect not significant.</p>

MEC – Munitions and Explosives of Concern
MMRP – Military Munitions Response Program
WoUS – Waters of the U.S.

DDESB – Department of Defense Explosives Safety Board
CWA – Clean Water Act

Table 2-3. Environmental Protection Measures

Resource	Environmental Protection Measures
Air Quality	<ul style="list-style-type: none">• All FRAQMD Fugitive Dust Control Measures would be followed (Appendix A).
Biological Resources	<ul style="list-style-type: none">• A qualified biologist would monitor all construction activities and the proposed work to ensure compliance with avoidance, minimization, and compensation components of the Proposed Action. The biological monitor would assist construction personnel in compliance with all conservation measures and guidelines.• The biological monitor would conduct environmental awareness training for construction crews before and during project implementation. The education program would briefly cover threatened and endangered species and any of their habitats that may be encountered during construction. Awareness training would cover all restrictions and guidelines that must be followed by construction crews to avoid or minimize impacts to threatened and endangered species and their habitat. Environmental awareness training would be conducted prior to construction.• The contractor would stake and flag the boundaries of all work and staging areas. Staking and flagging would be done before construction commences to ensure that construction vehicles, equipment, and personnel do not leave the designated work area. The project proponent would remove all stakes and flagging within 60 days of construction completion.• Potential threatened and endangered species habitat located adjacent to the construction area would be protected by placing orange barrier material or stakes and flagging around the perimeter of the threatened and endangered species habitat. The location of these barriers would be clearly marked on construction plans and their placement would be supervised by the biological monitor.• Any worker that inadvertently kills or injures a special-status species, or finds one injured or trapped, would immediately report the incident to the biological monitor. The USFWS Sacramento Endangered Species Office would be verbally notified of the incident within three days and would receive written notification within five days.• Work would be completed during the dry season, after 1 June and before 30 October. No work would occur during any storm event or within 12 hours of any storm event.• Off-road travel by vehicles or construction equipment would be prohibited outside of the designated work and staging areas.• Motor vehicles and equipment would be serviced and refueled only in designated service areas located on paved areas away from this site. Any spill of hazardous materials would be cleaned up immediately, in accordance with all federal, state and local regulations.• To protect northern harrier, preconstruction surveys would be

Table 2-3. Environmental Protection Measures

Resource	Environmental Protection Measures
Biological Resources (Continued)	<p>conducted by a qualified biologist prior to earth-disturbing activities to determine the presence of northern harrier nests. In order to avoid and minimize impacts to northern harrier, a 200-foot buffer would be established around active nests. No project-related operations would occur within this buffer until young have fledged or the species are no longer attempting to nest. No further environmental protection measures are required once young have fledged or after September 15.</p> <ul style="list-style-type: none"> • T-posts for the cattle fence would be hand driven no more than 12 inches deep. Nearby wetlands would be clearly flagged and no vehicles would be permitted in the vicinity of the wetlands. Any time a T-post would be required within 25 feet of a wetland concrete surface anchors would be used instead. • To protect potential giant garter snake habitat in and adjacent to the LBD project during construction activities, the following minimization measures would be implemented by the contractor and coordinated with the Beale AFB Environmental Office: <ul style="list-style-type: none"> ➤ Avoid construction activities within 100 feet of the banks of Hutchinson Creek. ➤ Construction activities would occur between June 1 and October 1 during the active period for giant garter snake.
Water Resources	<ul style="list-style-type: none"> • Best Management Practices. The contractor would adhere to best management practices and applicable codes and ordinances to reduce storm water runoff-related impacts to a level of insignificance. The following best management practices would be followed by the contractor prior to and during construction activities: <ul style="list-style-type: none"> ➤ Work would be completed during the dry season, after 1 June and before 30 October. No work would occur during any storm event or within 12 hours of any storm event. ➤ Erosion and sediment controls would be implemented as needed, including but not limited to: installation of silt fencing and straw waddles, grading during the dry season, compaction of upland spoils, and seeding and mulching areas of exposed soil as determined necessary by the Beale AFB Storm Water Manager. All vehicle operators would observe the posted speed limit on paved roads and a 20-mile per hour speed limit on unpaved roads. ➤ Off-road travel by vehicles or construction equipment would be prohibited outside of designated work areas. ➤ Motor vehicles and equipment would be fueled and serviced in designated service areas located on paved areas away from this site. • Disturbed areas would be backfilled and returned to normal grade. • All vegetated areas disturbed by construction shall be revegetated with

Table 2-3. Environmental Protection Measures

Resource	Environmental Protection Measures
	<p>an approved seed and straw mulch upon completion of the project.</p> <ul style="list-style-type: none">• Any soil generated through this project would be used for berm construction; therefore, no excess soil would be generated.• Reclaimed Water Restrictions. The use of reclaimed waste water for irrigation must comply with the reclamation requirements of Title 22, Division 4, CCR (Section 60301 et seq.). Therefore, the new waste water cannon field would be managed in the same manner that the existing waste water cannon field is currently managed:<ul style="list-style-type: none">➤ Cannons would be shut off 24 hours prior to a storm event, and remain off for at least 24 hours after the storm.➤ Cannons would be shut off if wind velocities exceed 30 miles per hour (mph).➤ Signs would be posted that indicate the use of reclaimed water at the site.➤ Parcels would be graded to prevent ponding.➤ Technicians would monitor and inspect parcels for soil saturation.➤ The majority of the water would be sprayed from June to October each year.➤ The goal is for Pond 4 to be empty on November 1 each year. Cannons would not be used during the wet season (January to March) while the ground is saturated, unless unseasonably dry conditions occur.• Metal plates or rubber matting would be installed in any area where equipment must cross drainages to avoid soil disturbance.• The contractor would comply with all permit conditions listed in CWA Section 404 Nationwide Permit 12 and the CWA Section 401 Water Quality Certification (See Appendix C).
Safety and Military Munitions Response Program	<ul style="list-style-type: none">• Prior to construction, work must be coordinated through the base Safety Office. If any suspected military munitions related material is found, workers must stop work in the area, move personnel away from the site, and contact the Beale Explosive Ordnance Disposal (EOD) flight. Workers should not touch or attempt to remove any material suspected to be military munitions related.• Contractor must prepare a construction site health and safety plan

AFB – Air Force Base
DoD – Department of Defense

USFWS – United States Fish and Wildlife Service
FRAQMD—Feather River Air Quality Management
District

3 Affected Environment

Section 3.0 describes the environmental resources and conditions most likely to be affected by the Proposed Action. This section provides information to serve as a baseline from which to identify and evaluate environmental changes likely to result from implementation of the Proposed Action. Baseline conditions represent current conditions. The potential environmental impacts of the Proposed Action and No Action Alternative on the baseline conditions are described in Section 4.0.

In compliance with NEPA, CEQ guidelines, and 32 CFR Part 989, as amended, the description of the affected environment focuses on those resources and conditions potentially subject to impacts including air quality, biological resources, cultural resources, geological resources, hazardous materials and waste management, noise, safety and military munitions, transportation resources, and water resources. Some environmental resources were assessed that, in accordance with Council on Environmental Quality guidelines, warrant no further analysis in this EA:

- **Land Use.** If the proposed project is implemented, the land use for the project area would change from open space to industrial. This is consistent with the land use at the nearby WWTP. Implementation of the Proposed Action would not significantly alter the existing land use at Beale AFB. Accordingly, this resource area was not analyzed in detail.
- **Socioeconomics.** The Proposed Action does not involve any activities that would directly affect off-Base activities, or directly or indirectly contribute to changes in socioeconomic resources. There would be no change in the number of personnel assigned to Beale AFB and no changes in area population or associated changes in demand for housing and services. Accordingly, this resource area was not analyzed in detail.
- **Environmental Justice.** The Proposed Action does not involve any activities that would contribute to adverse impacts to low-income or minority populations because all work would be performed within the Base boundary. Accordingly, this resource area was not analyzed in detail.
- **Cultural Resources.** No archeological or historic cultural sites have been recorded at or near the project site. If any suspected cultural resources are inadvertently discovered during the course of any action at the project site, work would be halted and the Cultural Resources Manager would be notified. Accordingly, this resource area was not analyzed in detail.
- **Geological Resources.** Construction would occur within an area where the physiographic features and geologic resources have been, in part, disturbed and modified by prior construction. Impacts to physiography and geology would be minimal. The effects on soil erosion and sedimentation from construction activities are considered minor because erosion and sediment control would be in place during construction. Accordingly, this resource area was not analyzed in detail.
- **Hazardous Materials and Waste.** The proposed project is not located on a

contaminated site. Construction activities would not involve any type of hazardous materials. Accordingly, this resource area was not analyzed in detail.

- **Noise.** Noise effects associated with the proposed project would be a temporary increase in noise levels during construction. The proposed project is approximately 3,000 feet from the base boundary and is not likely to generate noise levels in excess of any standards. Accordingly, this resource area was not analyzed in detail.
- **Transportation.** There could be short-term increases in traffic from construction vehicles during construction of the proposed project. All road and lane closures would be coordinated with security forces and would be temporary in nature. Temporary impacts from construction vehicles are expected to be minor. Accordingly, this resource area was not analyzed in detail.

3.1 Air Quality

Air quality in a given location is determined by the concentration of various pollutants in the atmosphere. National Ambient Air Quality Standards (NAAQS) are established by the U.S. Environmental Protection Agency (USEPA) for “criteria pollutants,” including ozone (O₃), carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter equal to or less than 10 microns in diameter (PM₁₀), particulate matter equal to or less than 2.5 microns in diameter (PM_{2.5}), and lead (Pb). NAAQS represent maximum levels of background pollution in the ambient air that are considered safe, with an adequate margin of safety to protect public health and welfare (Table 3-1).

Table 3-1. National and California Ambient Air Quality Standards

Measurement	Standard Value	Standard Type
CO		
8-hour Average	9 ppm (10 mg/m ³)	National Primary and CAAQS
1-hour Average	35 ppm (40 mg/m ³)	National Primary
1-hour Average	20 ppm (23 mg/m ³)	CAAQS
NO₂		
Annual Arithmetic Mean	0.053 ppm (100 µg/m ³)	National Primary and Secondary
Annual Arithmetic Mean	0.030 ppm (56 µg/m ³)	CAAQS
1-hour Average	0.18 ppm (338 µg/m ³)	CAAQS
O₃		
8-hour Average	0.08 ppm (157 µg/m ³)	National Primary and Secondary
8-hour Average	0.070 ppm (137 µg/m ³)	CAAQS
1-hour Average	0.09 ppm (180 µg/m ³)	CAAQS
Pb		
Quarterly Average	1.5 µg/m ³	National Primary and Secondary
Monthly Average	1.5 µg/m ³	CAAQS
PM₁₀		
24-hour Average	150 µg/m ³	National Primary and Secondary
Annual Arithmetic Mean	20 µg/m ³	CAAQS
24-hour Average	50 µg/m ³	CAAQS
PM_{2.5}		
Annual Arithmetic Mean	15 µg/m ³	National Primary and Secondary
Annual Arithmetic Mean	12 µg/m ³	CAAQS

24-hour Average	35 µg/m ³	National Primary and Secondary and CAAQS
SO₂		
Annual Arithmetic Mean	0.030 ppm (80 µg/m ³)	National Primary
24-hour Average	0.14 ppm (365 µg/m ³)	National Primary
3-hour Average	0.50 ppm (1,300 µg/m ³)	National Secondary
1-hour Average	0.25 ppm (655 µg/m ³)	CAAQS
24-hour Average	0.04 ppm (105 µg/m ³)	CAAQS

Source: California Air Resources Board 2007

Notes: Concentration expressed first in units in which it was promulgated. Equivalent concentrations are given in parentheses.

CAAQS - California Ambient Air Quality Standards

CO - Carbon monoxide

NAAQS - National Ambient Air Quality Standards

NO₂ - Nitrogen dioxide

O₃ - Ozone

PM_{2.5} - Particulate matter less than or equal to 2.5 microns in diameter

PM₁₀ - Particulate matter less than or equal to 10 microns in diameter

Pb - Lead

SO₂ - Sulfur dioxide

ppm - parts per million

mg/m³ - milligrams per cubic meter

µg/m³ - micrograms per cubic meter

The State of California adopted the NAAQS and promulgated additional California Ambient Air Quality Standards (CAAQS) for criteria pollutants. The California standards are more stringent than the Federal primary standards. Table 3-1 presents the primary and secondary NAAQS and CAAQS that apply to air quality in California.

Under the General Conformity Rule, the Clean Air Act (CAA) prohibits Federal agencies from performing projects that do not conform to a USEPA-approved State Implementation Plan (SIP). In 1993, USEPA developed final rules for how Federal agencies must determine air quality conformity prior to implementing a proposed Federal action. Under these rules, certain actions are exempt from conformity determinations, while others are assumed to be in conformity if total project emissions are below *de minimis* levels established under 40 CFR 93.153. Total project emissions include both direct and indirect emissions caused by the Federal action.

USEPA classifies the air quality in an air quality control region (AQCR) or in subareas of an AQCR according to whether the concentration of criteria pollutants in ambient air exceeds the primary or secondary NAAQS. All areas within each AQCR are therefore designated as either “attainment,” “nonattainment,” or “unclassified” for each of the six criteria pollutants. Attainment means that the air quality within an AQCR is better than the NAAQS, nonattainment indicates criteria pollutant levels exceed the NAAQS, and an unclassifiable air quality designation by USEPA means that there is not enough information to appropriately classify an AQCR; therefore, the area is considered in attainment.

The General Conformity Rule requires that any Federal action meet the requirements of a SIP or Federal Implementation Plan (FIP). More specifically, CAA conformity is assured when a Federal action does not cause a new violation of the NAAQS, contribute to an increase in the frequency or severity of violations of NAAQS, or delay the timely attainment of any NAAQS, interim progress milestones, or other milestones toward achieving compliance with the NAAQS. The General Conformity Rule applies only to

actions in nonattainment or maintenance areas and considers both direct and indirect emissions.

The California Air Resources Board (CARB), under the Health and Safety Code section 39607(e), is required to establish and periodically review area designation criteria. These designation criteria provide the basis for CARB to designate areas of California as attainment, nonattainment, or unclassified for the State standards. Each year, CARB reviews the area designations and updates them as appropriate, based on the three most recent complete and validated calendar years of air quality data.

Beale AFB is located in Yuba County, which is within the Sacramento Valley Intrastate AQCR. The Feather River Air Quality Management District (FRAQMD) is responsible for implementing and enforcing state and Federal air quality regulations in Yuba County, Sutter County, and portions of the Northern Sacramento Valley Air Basin. Table 3-2 presents the attainment designations for the project area. The Federal O₃ attainment status for FRAQMD has been characterized by USEPA as unclassified/attainment for Yuba County. The Federal attainment status for FRAQMD has been characterized as unclassified/attainment for all other criteria pollutants (USEPA 2005). The state attainment status for FRAQMD has been characterized by CARB as a nonattainment area for O₃ and for PM₁₀, and unclassifiable or attainment for all other criteria pollutants (CARB 2006).

Many chemical compounds found in the Earth's atmosphere act as "greenhouse gases." These gases allow sunlight to enter the atmosphere freely. When sunlight strikes the Earth's surface, some of it is reflected back towards space as infrared radiation (heat). Greenhouse gases absorb this infrared radiation and trap the heat in the atmosphere. Over time, the trapped heat results in the phenomenon known as global warming.

In April 2007, the United States Supreme Court declared that carbon dioxide (CO₂) and other greenhouse gases are air pollutants under the CAA. The Court declared that the USEPA has the authority to regulate emissions from new cars and trucks under the CAA. Many gases exhibit these "greenhouse" properties. The sources of the majority of greenhouse gases come mostly from natural sources but are also contributed to by human activity.

Table 3-2. Project Region (FRAQMD, Yuba County) Attainment Designations

Pollutant	State Standards (CAAQS)	Federal Standards (NAAQS)
Ozone (O ₃)	Nonattainment	Unclassified ^a /Attainment
Carbon Monoxide (CO)	Unclassified ^a	Unclassified ^a /Attainment
Nitrogen Dioxide (NO ₂)	Attainment	Unclassified ^a /Attainment
PM ₁₀	Nonattainment	Unclassified ^a /Attainment
PM _{2.5}	Unclassified ^a	Unclassified ^a /Attainment

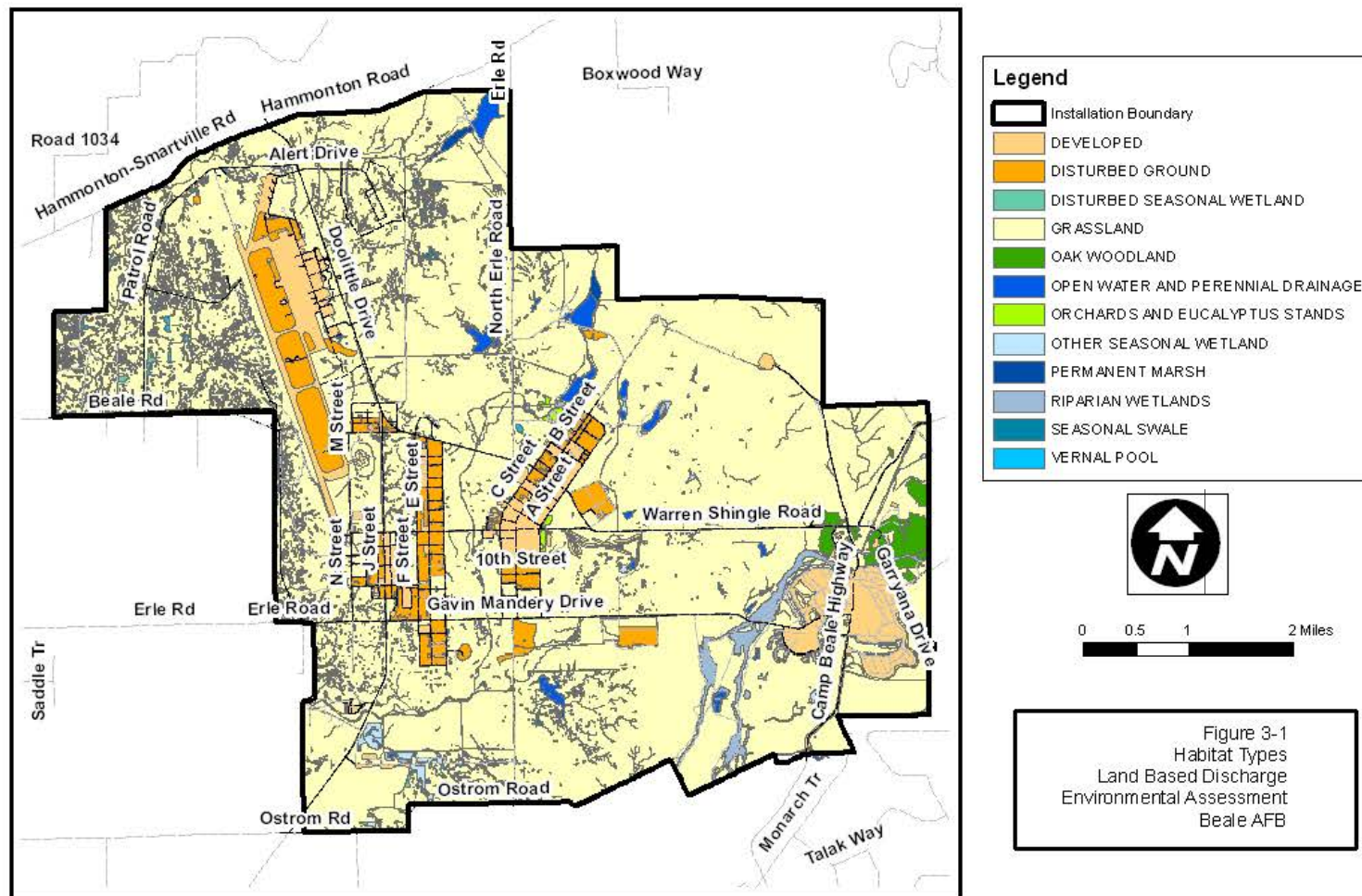
^aUnclassified means that there is insufficient data to determine attainment status
Source CARB 2006, USEPA 2005

3.2 Biological Resources

Biological resources include native or naturalized plants and animals and the habitats (i.e., wetlands, forests, and grasslands) in which they exist. Sensitive and protected biological resources include plant and animal species listed as threatened or endangered by the USFWS. Habitat communities on Beale AFB are shown in Figure 3-1.

This section describes the following aspects of the affected environment:

- Annual grasslands
- Wetland resources
- Special-status species



3.2.1 Annual grassland

Annual grassland is an upland plant community (habitat) dominated by nonnative grasses, but containing a diverse assemblage of native and nonnative forbs. Vegetation in the annual grassland is dominated by species that are rarely found in wetlands.

A portion of the Proposed Action would occur in annual grasslands. Most of the annual grasslands affected by the Proposed Action are previously disturbed and dominated by ruderal vegetation. The lower species diversity common in ruderal habitat generally provides less value to wildlife than the higher species diversity found in native annual grassland habitat. Scattered native wildflower species that represent remnants of the original vegetation are also present in less disturbed sites.

Annual grasslands at Beale AFB provide foraging habitat and cover to numerous locally and regionally common wildlife species. The majority of annual grasslands that would be affected by the Proposed Action have been subject to disturbances from human activity.

3.2.2 Wetland Resources

Vernal pools on Beale AFB are classified as Northern Hardpan Vernal Pools (Sawyer and Keeler-Wolf 1995). Northern Hardpan Vernal Pools are an aggregate vegetation community that includes vernal pools, vernal swale wetlands, and depressional seasonal wetlands. Vernal pools are small, shallow, seasonal bodies of water formed by precipitation accumulating in depressions over an impervious claypan or bedrock bottom. They provide unique habitat for plants that germinate as aquatic or semiaquatic plants but must adapt to terrestrial life and a dry land environment as the pool dries.

The dominant vegetation species in typical vernal pools at Beale AFB are coyote thistle (*Eryngium vaseyi*), Fremont goldfields (*Lasthenia fremontii*), white-flowered navarretia (*Navarretia leucocephala*), annual hairgrass (*Deschampsia danthonioides*), field owl's-clover (*Castilleja campestris*), woolly marbles (*Psilocarphus brevissimus*), and ornate downingia (*Downingia ornatissima*). Vegetation in vernal pools is dominated by species that are usually found in wetlands (BAFB 2001).

Disturbed seasonal wetlands are wet areas that have been degraded by human or livestock activities, such as clearing, grading, trampling, or grazing. The disturbed seasonal wetlands in the study area are not natural features, but were formed by grading activities that created depressions. Because these are recently formed features, the vegetation may be similar to that of vernal pools. However, the diversity and cover of vernal pool species in the disturbed areas are lower than in natural vernal pools, and the cover of nonnative disturbance-tolerant species is higher.

Seasonal wetlands, including vernal pools, at Beale AFB provide important foraging and breeding habitat and cover for wetland wildlife and invertebrates. The high densities of terrestrial and aquatic invertebrates (i.e., ostracods, copepods, flatworms, and mosquito larvae) in wetland habitats provide an abundance of food for wildlife. Many wildlife species, including killdeer (*Charadrius vociferous*) and Pacific tree frogs (*Pseudacris regilla*), feed on the aquatic invertebrates found in seasonal wetlands. Many other wildlife species feed in or adjacent to wetlands; these species include western kingbirds

(*Tyrannus verticalis*), cliff swallows (*Hirundo pyrrhonota*), barn swallows (*H. rustica*), red-winged blackbirds (*Agelaius phoeniceus*), and common kingsnakes (*Lampropertis getulus*) (BAFB 2008a). Wetlands provide potential habitat for several special-status species listed in Section 3.2.3.

Other seasonal wetlands occur in topographic low areas or depressions. While they might be associated with riverine systems (either tributary to or interspersed within riverine features), at some point or points during the rainy season their hydrology is dominated by still water.

The vernal pools and other seasonal wetlands identified near the Proposed Action were determined using site visits, existing Beale AFB delineations and light detection and ranging (LiDAR) data. Portions of the proposed project would be located near vernal pools and other seasonal wetlands.

3.2.3 Special-Status Species

Vegetation

Six plant species formally protected under Federal or state law are or potentially could be found in Yuba County: Hartweg's golden sunburst (*Pseudobahia bahiifolia*), hairy Orcutt grass (*Orcuttia pilosa*), Hoover's spurge (*Chamaesyce hooveri*), Greene's tuctoria (*Tuctoria greene*), Sacramento Orcutt grass (*Orcuttia viscida*), and slender Orcutt grass (*Orcuttia tenuis*). None of these species have been observed on Beale AFB.

Animals

There are 11 federally listed animal species with potential to occur at Beale AFB. Of these, eight formally listed and one recently delisted species were evaluated for having some potential for individuals or their habitat to occur in the vicinity of the Proposed Action. The remaining three were excluded from further analysis for the following reasons: Longhorn fairy shrimp (*Branchinecta longiantenna*) and conservancy fairy shrimp (*Branchinecta conservatio*) have particular vernal pool requirements that do not exist in the project area. Neither of these species has been detected on the installation after extensive vernal pool surveys (BAFB 2008a). California tiger salamander (*Ambystoma californiense*) has not been observed on the installation during previous surveys. Beale AFB lies north of the species' range and it is presumed extirpated in Yuba County (BAFB 2005).

Federally protected species evaluated in this assessment are listed in **Table 3-3**.

Table 3-3. Federally Listed Species Evaluated

Common Name	Scientific Name	Federal Status
Vernal pool tadpole shrimp	<i>Lepidurus packardii</i>	Endangered
Vernal pool fairy shrimp	<i>Branchinecta lynchi</i>	Threatened
Valley elderberry longhorn beetle	<i>Desmocerus californicus dimorphus</i>	Threatened
Central Valley steelhead	<i>Oncorhynchus mykiss</i>	Threatened
Chinook salmon	<i>Oncorhynchus tshawytscha</i>	
California red-legged frog	<i>Rana aurora draytonii</i>	Threatened

Giant garter snake	<i>Thamnophis gigas</i>	Threatened
Bald eagle	<i>Haliaeetus leucocephalus</i>	Delisted*

Note: *Delisted, to be monitored for 5 years.

Vernal pool fairy shrimp and vernal pool tadpole shrimp are found in vernal pools and other ephemeral wetlands that form in grassy swales. Vernal pool fairy shrimp and vernal pool tadpole shrimp do occur on Beale AFB (BAFB 2008a).

The Valley elderberry longhorn beetle is found at the edges of riparian habitat and is closely associated with blue elderberry (*Sambucus mexicana*). The existence of valley elderberry longhorn beetle has been previously detected on Beale AFB during protocol-level surveys (BAFB 2008a).

Central Valley steelhead and Chinook Salmon use perennial and intermittent streams, and has been observed in Dry Creek upstream from Beale AFB (BAFB 2008a).

The California red-legged frog might be supported by emergent riparian vegetation near deep ponds or intermittent streams, on the installation. This species has not been documented on Beale AFB (BAFB 2008a).

The giant garter snake is associated with marshes, water conveyance channels, and associated uplands. This species requires sufficient water to supply cover and food such as small fish and amphibians; and emergent, herbaceous aquatic vegetation accompanied by vegetated banks to provide basking and foraging habitat (BAFB 2005). The giant garter snake has not been documented on Beale AFB, but has the potential to occur in permanent wetlands.

The bald eagle is an irregular migrant to the area, and is considered to use the installation for occasional foraging (BAFB 2008a).

Swainson's Hawk (*Buteo swainsoni*), a state threatened species, is an infrequent summer visitor, but has been known to breed at Beale AFB (BAFB 2008a). Swainson's hawk utilizes riparian habitats and isolated trees for nesting. Grasslands and agricultural areas adjacent to breeding sites are used for foraging.

Several other special-status species occur on Beale AFB and have the potential to fly over or forage in the vicinity of the proposed project site. Western burrowing owl (*Athene cunicularia hypugea*) breeds and forages in nonnative grasslands and agricultural fields and is a year-round resident of Beale AFB. Golden eagle (*Aquila chrysaetos*) uses grasslands and savannas for foraging and is a year-round visitor. White-tailed kite (*Elanus leucurus*) uses open savannas, grasslands, and wetlands for foraging and is a year-round resident. Northern harrier (*Circus cyaneus*) nests and forages in grasslands and wetlands and is a year-round resident. Ferruginous hawk (*Buteo regalis*) uses open grasslands with perches and is a winter resident of Beale AFB. Golden eagle and white-tailed kite are state protected species. Western burrowing owl, northern harrier, and ferruginous hawk are considered species of special concern by state and Federal agencies,

but receive no legal protection. Bird species present at the proposed project site are subject to regulation under the Migratory Bird Treaty Act.

3.3 Water Resources

Water resources include surface water, groundwater, and floodplains. Surface water resources consist of lakes, rivers, and streams. Surface water is important for its contributions to the economic, ecological, recreational, and human health of a community or locale. Groundwater typically can be described in terms of its depth from the surface, aquifer or well capacity, water quality, surrounding geologic composition, and recharge rate. Floodplains are areas of low-level ground present along a river or stream channel. Federal, state, and local regulations often limit floodplain development to passive uses such as recreation and preservation activities to reduce the risks to human health and safety.

3.3.1 Surface Water

Several lakes and small impoundments are located on Beale AFB, and three major drainage channels (Dry, Hutchinson, and Reeds creeks) cross the Base in a generally northeast-to-southwest direction. Numerous small drainage swales and ditches drain surface water on the base into these three major drainage channels.

3.3.2 Jurisdictional Waters of the United States

Those areas that convey water, exhibit an “ordinary high water mark,” and do not meet the three parameter criteria for wetlands, might be non-wetland waters of the U.S. An ordinary high water mark is defined as the line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation, or the presence of litter and debris (33 CFR 328.3). This range of jurisdiction is typically regarded as the limit of the 2-year storm (a 50 percent probability that the line would be reached during the rainy season) (Foothill 2004).

The USACE recognizes three distinct types of drainage features: ephemeral drainages, intermittent drainages, and perennial drainages. Ephemeral drainages are fed primarily by storm water. They convey flows during and immediately after storm events; however, they may stop flowing or begin to dry if the interval between storms is sufficiently long. Intermittent drainages are fed primarily by groundwater and supplemented by storm water. After the onset of rains they should have persistent flows throughout and past the end of the rainy season. Eventually, depending on the availability of groundwater, these features become dry. Perennial drainages are fed predominantly by groundwater and supplemented by storm water. Flows in these systems persist throughout the year (Foothill 2004).

Jurisdictional waters of the U.S., including seasonal wetlands and small drainages occur in the project area. Hutchinson Creek is located north of the project area.

3.3.3 Groundwater

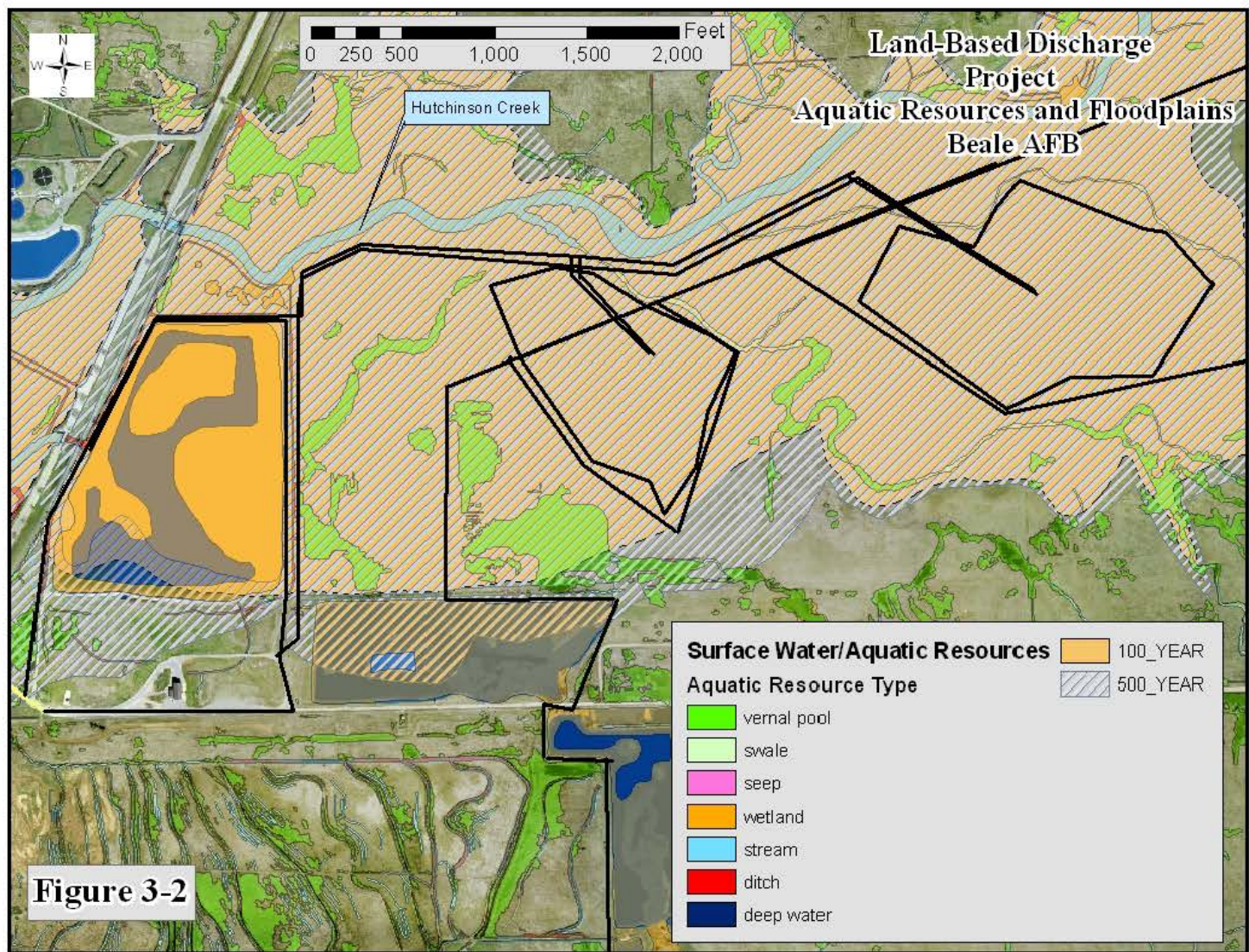
Yuba County lies over the north-central portion of the Central Valley groundwater basin, which is an extensive aquifer extending approximately 400 miles from Red Bluff to Bakersfield and averaging 40 miles wide. This aquifer is a complex system of different groundwater basins composed of stratified sand, silt, and clay layers many thousands of feet thick. Groundwater at Beale AFB that belongs to this regional groundwater basin is found 300 to 500 feet below ground surface (bgs) and is presumed to originate in unconfined aquifer materials with local clay/silt lenses overlying the Central Valley groundwater basin. Groundwater in the northern portion of the base receives recharge from the Yuba River drainage basin and generally has the highest quality at the base, with low levels of total dissolved solids, nitrates, and sulfates; groundwater in the central portion of the base has higher levels of total dissolved solids; and groundwater at the south end of the base receives recharge from Dry Creek and Bear River and has quality between that of the north and central regions.

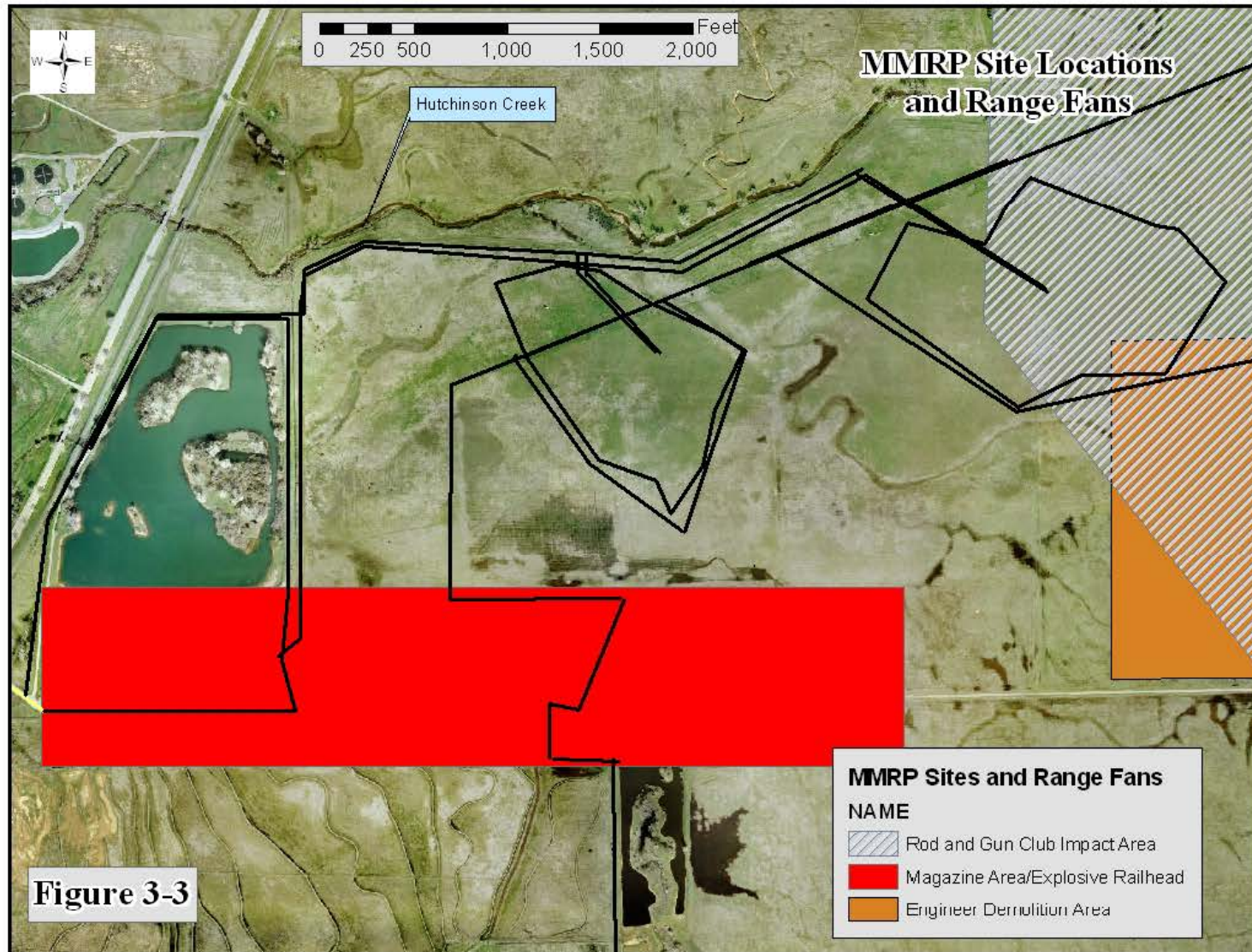
Groundwater at Beale AFB is generally first encountered within about 4 to 100 feet bgs at monitoring wells throughout the Base (CH2M Hill 2007a). Groundwater has been impacted by former base activities and is monitored and sampled under the Environmental Restoration Program (ERP). Groundwater elevations are measured and samples are analyzed for chemicals that have historically been detected at ERP sites. Groundwater at Beale AFB mainly flows to the west, toward a large regional water table depression caused by historical agricultural pumping. Agricultural pumping has declined but the regional depression remains. The water table has risen in recent years because farmers are relying on imported irrigation water.

Water for domestic use at Beale AFB is provided from nine deep wells on the base. Total water use at the Base varies from 2.5 to 6.0 million gallons per day. The wells have a total combined pumping capacity of 5.0 million gallons per day. Water quality meets primary drinking water standards, but not secondary water quality standards for iron and manganese and is treated by chlorination and fluoridation (BAFB 2008b).

3.3.4 Floodplains

Creeks at Beale AFB are surrounded by wide floodplain areas created by the occasional heavy rainfall that occurs in the region, impervious soil conditions, and lack of topographic relief. There are two types of floodplains: (1) the 100-year floodplain has a 1 percent chance of flooding in any given year and (2) the 500-year floodplain has a 0.2 percent chance of flooding in any given year. This likelihood of occurrence is based on historic hydrology; future flood flows may be more or less frequent. The location of the 100- and 500-year floodplain at Beale AFB is shown in Figure 3-2. Various areas along major drainages at Beale AFB (Dry, Reeds, and Hutchinson creeks; and Best Slough) are within the 100-year floodplain. These floodplains flood periodically to varying degrees. Portions of the flightline, cantonment, military family housing, and riparian areas are within these floodplains (BAFB 2008b). The project site is within a 100-year and 500-year floodplain.





3.4 Safety and Military Munitions Response Program

A safe environment is one in which the potential for death, serious bodily injury or illness, or property damage is eliminated or reduced as much as possible. Human health and safety addresses workers' health and safety during burning, demolition and construction activities, and public safety during burning, demolition and construction activities and subsequent operations of those facilities.

All contractors performing construction activities at Beale AFB are responsible for following ground safety regulations and worker compensation programs and are required to conduct construction activities in a manner that does not pose any risk to workers or Base personnel. An industrial hygiene program addresses exposure to hazardous materials, use of personal protective equipment, and availability of Material Safety Data Sheets. Industrial hygiene is a responsibility of contractors.

Beale AFB has several activities that require Explosive Quantity Distance (EQD) Safety Zones. These zones are established to minimize risk and exposure to individuals from explosives and explosive storage facilities. The General Plan shows numerous EQD Safety Zones on the northern and southern parts of the Base (BAFB 2005).

3.4.1 Military Munitions Response Program

The Military Munitions Response Program (MMRP) was established in 2001 to manage environmental health and safety issues presented by unexploded ordnance (UXO), discarded military munitions, and munitions constituents (MC). The MMRP is an element of the Defense Environmental Restoration Program, under which the Secretary of Defense carries out environmental restoration resulting from historical activities.

The land encompassing Beale AFB was originally part of Camp Beale. Camp Beale was established in 1942 and consisted of approximately 62,000 acres in Yuba and Nevada Counties. Between 1942 and 1964, large portions of Camp Beale were leased, transferred, or sold to other parties. Between 1942 and 1964 the U.S. Army conducted various munitions tests throughout Camp Beale. Since 1964, the USAF has also conducted munitions tests on Beale AFB. In 2001, the USACE conducted an archives search report to determine the historic land uses, range locations, and types of munitions that might have been used on Camp Beale.

In September 2007, a Final Report for the Comprehensive Site Evaluation (CSE) Phase I was completed. The goal of the CSE Phase I was to obtain sufficient data to serve as the basis for USAF decision making regarding further munitions response actions or investigations. Based on the results presented in the CSE Phase I Report, a Final Work Plan for the CSE Phase II was completed in May 2008. The CSE Phase II Work Plan identifies eight groups of Munitions Response Areas (MRA) to be evaluated.

A portion of the LBD project on the eastern side falls within the active range fan for the Beale AFB Rod and Gun Club. Portions of the LBD project also fall within MMRP sites. A small portion of the eastern side of the project falls within MMRP site ED598,

Engineer Demolition Area. The road around Pond 4 that would be used for access to the project site falls within MMRP site XU634 (Figure 3-3).

The following are descriptions of the MMRP sites located within the project area:

ED 598, Engineer Demolition Area

ED 598, Engineer Demolition Area, was used in the late 1950's through 1960's. Information on what types of munitions and explosives of concern (MEC) were used is not available, but the following may be present at the site:

- 37mm, 60mm, and 81mm artillery ammunition;
- 75mm and 105mm HE Howitzer shells, and 105mm HE armored Howitzer shells;
- 57mm recoilless rifle shells;
- Demolition materials (time fuses, detonating cord, blasting cap, and demolition charge);and
- Unfired small caliber ammunition.

These items are not expected to be present due to the nature of the training and the policies in effect for the EOD unit to inspect and remove all munitions debris remaining after each training session. No MEC or munitions constituents (MC) were observed during the CSE Phase I visual survey (URS 2007).

XU 634, Magazine Area (Igloo Road)

It is unknown what MEC was used here or what type of activities occurred. This site is suspected to be a former munitions storage area. The railroad tracks and igloo bunkers are still evident at the site. The area is currently used as a vehicle inspection area for traffic entering the base through the Wheatland Gate.

4 Environmental Consequences

This section of the EA analyzes direct and indirect effects on the environment associated with the scope of the Proposed Action as described in Section 2.0 and in consideration of the potentially affected environment as characterized in Section 3.0. Direct effects are caused by the action and occur at the same time and place. Indirect effects are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable.

4.1 Air Quality

The potential impacts on local and regional air quality conditions near a proposed Federal action are determined based on the increases in regulated pollutant emissions relative to existing conditions and ambient air quality. Specifically, the impact in NAAQS attainment areas would be considered significant if the net increases in pollutant emissions from the Federal action resulted in one of the following scenarios:

- Cause or contribute to a violation of any national or state ambient air quality standard;
- Expose sensitive receptors to substantially increased pollutant concentrations; or
- Represent an increase of 10 percent or more in an affected AQCR emissions inventory.

Impacts on air quality in NAAQS nonattainment areas are considered significant if the net changes in project-related pollutant emissions result in one of the following scenarios:

- Cause or contribute to a violation of any Federal or state ambient air quality standard;
- Increase the frequency or severity of a violation of any ambient air quality standard;
- Exceed any significance criteria established in a SIP; or
- Delay the attainment of any standard or other milestone contained in the SIP.

Table 3-2 lists Yuba County's Federal and state attainment designation. With respect to the General Conformity Rule, impacts on air quality would be considered significant if the Proposed Action would result in an increase of a Federal nonattainment area's emissions inventory by 10 percent or more for one or more nonattainment pollutants, or if such emissions exceeded *de minimis* threshold levels established in 40 CFR 93.153(b) for individual nonattainment pollutants or for pollutants for which the area has been designated as a nonattainment. Because Yuba County is classified as unclassified/attainment for all criteria pollutants identified by the EPA, a general conformity evaluation is not required.

FRAQMD is responsible for setting thresholds for the area to meet the SIP milestones. FRAQMD has established Thresholds of Significance presented in Table 4-1 for reactive organic gases (ROG), nitrogen oxides (NO_x), and PM₁₀.

Table 4-1. Project Air Impact Thresholds

Pollutant		FRAQMD Significance Thresholds (lbs/day)	Conformity <i>de minimus</i> Thresholds (tons/year)
Ozone Precursor Emissions	Reactive Organic Gases (ROG/VOC)	25	N/A ^a
	Oxides of Nitrogen (NO _x)	25	N/A ^a
Respirable Particulate Matter Emissions	Fine Particulate Matter (PM ₁₀)	80	N/A ^a

^aN/A - Not applicable because project area is Federally classified as Attainment or Unclassified

PM₁₀ - Fine particulate matter less than 10 microns in diameter

Source FRAQMD 2009, USEPA 2005

An analysis was completed to evaluate whether the Proposed Action would be in conformity with applicable FRAQMD requirements. Projected regulated pollutant emissions associated with the Proposed Action were estimated using available construction emissions and other nonpermitted emissions source information. Emissions calculations and threshold comparisons are presented in Appendix A.

4.1.1 Proposed Action

Construction projects would generate PM₁₀ as fugitive dust from ground-disturbing activities (i.e., grading, demolition, and soil piles) and combustion of fuels in construction equipment. Fugitive dust emissions would be greatest during initial site preparation activities and would vary from day to day depending on the construction phase, level of activity, and prevailing weather conditions. The quantity of uncontrolled fugitive dust emissions from a construction site is proportional to the area of land being worked and the level of construction activity. Fugitive dust emissions can be minimized by wetting down the soil.

The construction emissions presented in Table 4-2 include the maximum daily construction emissions associated with the Proposed Action at Beale AFB. These emissions would produce slightly elevated short-term criteria pollutant ambient air concentrations. However, the direct effects would be temporary and would decrease rapidly with distance from the proposed construction sites.

Specific information describing the types of construction equipment required for a specific task, the hours the equipment is operated, and the operating conditions vary widely. For this analysis, parameters were estimated using established methodologies for construction and experience with similar types of construction projects. These emissions would be of a temporary nature.

For the LBD construction, a maximum disturbance of 5 acre per day is assumed, with use of water trucks to reduce fugitive dust emissions. Emission factors, calculations, and estimates of construction-related emissions for the Proposed Action are detailed in Appendix A.

Table 4-2. Maximum Emissions Estimates from the Proposed Action				
Maximum Daily Project Emissions (lbs/day)				
Project	ROG/VOC	NO_x	CO₂	PM₁₀
Land-Based Discharge	2.9	24.8	1974.0	51.2

FRAQMD is classified by CARB as being in nonattainment for O₃ and PM₁₀ and is in attainment for all other criteria pollutants. The base is in the Yuba County portion of FRAQMD that has been classified by USEPA as unclassified/attainment for O₃. As shown in Table 4-2, the Proposed Action would generate emissions below FRAQMD's thresholds of significance. No significant direct or indirect effects on regional or local air quality would result from implementation of the Proposed Action. Since the base is located in an unclassified/attainment area for criteria pollutants identified by the EPA, no formal conformity analysis is required.

Greenhouse Gas Emissions

The Proposed Action would contribute directly to emissions of greenhouse gases from the combustion of fossil fuels from construction equipment. CO₂ accounts for 92 percent of all greenhouse gas emissions; electric utilities are the primary source of anthropogenic CO₂, followed by transportation. The California Energy Commission estimates that in 2004, gross CO₂ emissions in California were 492 million metric tons of CO₂ equivalents, or 542.3 million tons of CO₂ equivalents (CEC 2006). Construction activities associated with the Proposed Action would emit 50 tons of CO₂ which is 0.00001% of the California state CO₂ emissions. Therefore, the Proposed Action would have negligible contribution towards statewide greenhouse gas inventories.

Environmental Protection Measures

All FRAQMD Fugitive Dust Control Measures would be followed (Appendix A).

4.1.2 No Action Alternative

Under the No Action Alternative, there would be no change in or effects to air quality at Beale AFB.

4.2 Biological Resources

Determining the significance of potential impacts on biological resources is based on the importance (i.e., legal, commercial, recreational, ecological, or scientific) of the resource, the percentage of the resource that would be affected relative to its occurrence in the region, the sensitivity of the resource to proposed activities, and the duration of ecological ramifications. Impacts on biological resources are significant if species or habitats of high concern are adversely affected over relatively large areas, or if disturbances cause reductions in population size or impact the distribution of a species of high concern.

4.2.1 Proposed Action

During the design phase of the Proposed Action, extensive efforts were made by Beale AFB to avoid and minimize potential construction-related disturbances (direct or indirect) on sensitive habitats and associated special-status plant and wildlife species. Plant and wildlife surveys were conducted at the project site to determine the optimal placement of project features in relation to natural features to avoid undue impacts on biological resources. Environmental protection measures (Table 2-3) would be used to minimize potential impacts to vernal pools or seasonal wetland areas.

Annual Grasslands

Implementation of the Proposed Action would result in a small loss of nonnative grassland habitat during construction. However, Beale AFB has an abundance of comparable grassland habitat in the surrounding area. Therefore, no adverse impacts on grassland habitat would occur from implementation of the Proposed Action.

Wetland Resources and Special-Status Species

Of the special status species known to occur at Beale AFB, only three have the potential to occur in the project vicinity (Giant garter snake, vernal pool fairy shrimp, vernal pool tadpole shrimp). Hutchinson Creek, just north of the proposed project area, is considered marginally suitable habitat for the giant garter snake. Beale AFB lies well beyond the eastern boundary of the species' documented range. The nearest giant garter snake record lies more than 8 miles southwest of Beale (BAFB 2008a). Hutchinson Creek is not within the construction area and so the proposed action would have no effect on giant garter snakes.

Vernal pool fairy shrimp and vernal pool tadpole shrimp occur in northern hardpan vernal pools. They can also occur in swales containing highly turbid water, tire tracks or ditches, and often unplowed grasslands.

Vernal pools or seasonal wetlands that are within the project footprint and would not be filled, trenched, or removed or those that are outside the project footprint but within 250 feet must be evaluated for indirect impacts.

While vernal pools and seasonal wetlands are near the project area, none of these wetlands would be impacted, directly or indirectly. Only portions of the piping, electrical conduit, and the rerouted cattle fence would be within 250 ft. of any vernal pools or seasonal wetlands. Where the cattle fence must cross wetlands, the T-posts would span the wetlands. Additionally, concrete surface anchors would be used to secure T-posts that are within 25 ft. of wetlands or drainages to avoid impacts.

No elderberry shrubs are located in the project area and no riparian vegetation exists within the vicinity of the project. The proposed project site does not have appropriate habitat for valley elderberry longhorn beetle and so this species would not be affected by the proposed action.

Central Valley Steelhead (*Oncorhynchus mykiss*) habitat occurs in Dry Creek downstream from Beale AFB and may occur on Beale during high flow events. The drainages in this project are not connected directly to Dry Creek; they drain into Hutchinson Creek (BAFB 2007). Dry Creek is 2.4 miles from the project site (BAFB 2008c).

Fall-run Chinook Salmon (*Oncorhynchus tshawytscha*) habitat occurs in Dry Creek downstream from Beale AFB and may occur on Beale during high flow events. The drainages in this project are not connected directly to Dry Creek; they drain into Hutchinson Creek (BAFB 2007). Dry Creek is 2.4 miles from the project site (BAFB 2008c).

The California red-legged frog was not observed during biological surveys of the proposed project site. This species is very rare within Yuba County and only one unsubstantiated report exists for Beale AFB. The Proposed Action does not impact ponds, streams, or emergent riparian habitat which could be used by this species.

The bald eagle is only considered to use the installation for occasional foraging. Bald eagles occasionally occur on Beale AFB during winter months; however, Beale AFB does not support bald eagle breeding habitat. No disturbance to nesting sites would occur and there is abundant foraging ground in the surrounding areas.

The Swainson's hawk is an occasional visitor to Beale AFB and has been known to breed at the base in the past. The Proposed Action's area of effect is not within a riparian corridor, so any potential breeding sites would not be disturbed. There is abundant foraging habitat in the surrounding area for this species and the Proposed Action would not affect the small mammal community in the area this species feeds on.

The western burrowing owl was not observed during biological surveys of the proposed project site. The area has suitable topography and grassland foraging habitat for burrowing owls; however, no burrowing owls are known to exist within the vicinity of the project area.

The Golden eagle (*Aquila chrysaetos*), White-tailed kite (*Elanus leucurus*), Northern harrier (*Circus cyaneus*), and Ferruginous hawk (*Buteo regalis*) utilize grassland habitat for foraging. The proposed project would not significantly affect small mammal community in the area, and so should have no negative effect upon these bird species.

Beale AFB received concurrence on information consultation with the U.S Fish and Wildlife Service USFWS on 7 January 2009. The USFWS agreed with Beale AFB's determination that this project is not likely to adversely affect any special status species.

By following the environmental protection measures listed below, no impacts to special status species are anticipated.

Environmental Protection Measures

Measure 1: A qualified biologist would monitor all construction activities and the proposed work to ensure compliance with avoidance, minimization, and compensation components of the Proposed Action. The biological monitor would assist construction personnel in compliance with all conservation measures and guidelines.

Measure 2: The biological monitor would conduct environmental awareness training for construction crews before and during project implementation. The education program would briefly cover threatened and endangered species and any of their habitats that may be encountered during construction. Awareness training would cover all restrictions and guidelines that must be followed by construction crews to avoid or minimize impacts to threatened and endangered species and their habitat. Environmental awareness training would be conducted prior to construction.

Measure 3: The contractor would stake and flag the boundaries of all work and staging areas. Staking and flagging would be done before construction commences to ensure that construction vehicles, equipment, and personnel do not leave the designated work area. The project proponent would remove all stakes and flagging within 60 days of construction completion.

Measure 4: Potential threatened and endangered species habitat located adjacent to the construction area would be protected by placing orange barrier material or stakes and flagging around the perimeter of the threatened and endangered species habitat. The location of these barriers would be clearly marked on construction plans and their placement would be supervised by the biological monitor.

Measure 5: Any worker that inadvertently kills or injures a special-status species, or finds one injured or trapped, would immediately report the incident to the biological monitor. The USFWS Sacramento Endangered Species Office would be verbally notified of the incident within three days and would receive written notification within five days.

Measure 6: Work would be completed during the dry season, after 1 June and before 30 October. No work would occur during any storm event or within 12 hours of any storm event.

Measure 7: Off-road travel by vehicles or construction equipment would be prohibited outside of the designated work and staging areas.

Measure 8: Motor vehicles and equipment would be serviced and refueled only in designated service areas located on paved areas away from this site. Any spill of hazardous materials would be cleaned up immediately, in accordance with all federal, state and local regulations.

Measure 9: Protection of Northern Harrier Nests: To protect northern harrier, preconstruction surveys would be conducted by a qualified biologist prior to earth-disturbing activities to determine the presence of northern harrier nests. In order to avoid and minimize impacts to northern harrier, a 200-foot buffer would be established around active nests. No project-related operations would occur within this buffer until young have fledged or the species are no longer attempting to nest. No further environmental protection measures are required once young have fledged or after September 15.

Measure 10: T-posts for the cattle fence would be hand driven no more than 12 inches deep. Nearby wetlands would be clearly flagged and no vehicles would be permitted in the vicinity of the wetlands. Any time a T-post would be required within 25 feet of a wetland concrete surface anchors would be used instead.

Measure 11: Protection of Giant Garter Snake Habitat: To protect potential giant garter snake habitat in and adjacent to the LBD project during construction activities, the following minimization measures would be implemented by the contractor and coordinated with the Beale AFB Environmental Office:

- Avoid construction activities within 100 feet of the banks of Hutchinson Creek.
- Construction activities would occur between June 1 and October 1 during the active period for giant garter snake. Giant garter snakes hibernate in burrows during the winter and can easily be injured or killed by construction equipment.

4.2.2 No Action Alternative

Under the No Action Alternative, there would be no impacts on biological resources at Beale AFB.

4.3 Water Resources

Evaluation criteria for water resources impacts are based on water availability, quality, and use; existence of floodplains; and associated regulations. An impact on water resources would be significant if it were to reduce water availability to existing users or interfere with the supply, create or contribute to overdraft of groundwater basins, exceed safe annual yield of water supply sources, adversely affect water quality or endanger public health by creating or worsening adverse health hazard conditions, threaten or damage unique hydrologic characteristics, or violate established laws or regulations that have been adopted to protect or manage water resources of an area. The impact of flood hazards on a proposed action is significant if such an action is proposed in an area with a high probability of flooding.

4.3.1 Proposed Action

Surface Waters

Implementation of the Proposed Action would not be expected to have direct or indirect adverse effects on water quality. Land application of effluent would occur with the same restrictions. The effluent would meet Waste Discharge Requirements prescribed by the Beale AFB Land Based Discharge National Pollutant Discharge Elimination System (NPDES) permit from the CRWQCB.

The berms constructed around the wastewater cannon fields and the special design features associated with the drain pit would prevent any effluent from reaching Hutchinson Creek. Proper erosion and sedimentation controls would be installed prior to construction to prevent any stormwater runoff from reaching Hutchinson Creek. Therefore, significant impacts to surface waters would not be expected as a result of the Proposed Action.

Jurisdictional Waters of the U.S.

Approximately 0.0169 acres of jurisdictional waters of the U.S. would be temporarily impacted by the proposed action. The utilities for the wastewater cannons and the drain pit would be installed in a seasonal drainage swale, but the drainage would be restored to its previous state. Soil removed by excavation would be placed as fill subsequent to the installation of the utilities and drain pit.

Another seasonal swale located on the site would not be impacted because the piping would be constructed under the swale using horizontal boring.

Groundwater

None of the activities associated with the Proposed Action would be expected to affect groundwater quality.

Floodplains

The Proposed Action has the potential to impact approximately 60 acres of 100 and 500 year floodplains (Figure 2-3). Any expansion of the floodplain due to the proposed

action would likely be local and would occur in an isolated area where no structures are present. Any effect on the floodplain would also be of short duration because Beale AFB is at a higher elevation than the surrounding area.

Environmental Protection Measures

Measure 1: Best Management Practices. The contractor would adhere to best management practices and applicable codes and ordinances to reduce storm water runoff-related impacts to a level of insignificance. The following best management practices would be followed by the contractor prior to and during construction activities:

- Work would be completed during the dry season, after 1 June and before 30 October. No work would occur during any storm event or within 12 hours of any storm event.
- Erosion and sediment controls would be implemented as needed, including but not limited to: installation of silt fencing and straw wattles, grading during the dry season, compaction of upland spoils, and seeding and mulching areas of exposed soil as determined necessary by the Beale AFB Storm Water Manager. All vehicle operators would observe the posted speed limit on paved roads and a 20-mile per hour speed limit on unpaved roads.
- Off-road travel by vehicles or construction equipment would be prohibited outside of designated work areas.
- Motor vehicles and equipment would be fueled and serviced in designated service areas located on paved areas away from this site.

Measure 2: Disturbed areas would be backfilled and returned to normal grade.

Measure 3: All vegetated areas disturbed by construction shall be revegetated with an approved seed and straw mulch upon completion of the project.

Measure 4: Any soil generated through this project would be used for berm construction; therefore, no excess soil would be generated.

Measure 5: Reclaimed Water Restrictions. The use of reclaimed waste water for irrigation must comply with the reclamation requirements of Title 22, Division 4, CCR (Section 60301 et seq.). Therefore, the new waste water cannon field would be managed in the same manner that the existing waste water cannon field is currently managed:

- Cannons would be shut off 24 hours prior to a storm event, and remain off for at least 24 hours after the storm.
- Cannons would be shut off if wind velocities exceed 30 miles per hour (mph).
- Signs would be posted that indicate the use of reclaimed water at the site.
- Parcels would be graded to prevent ponding.
- Technicians would monitor and inspect parcels for soil saturation.
- The majority of the water would be sprayed from June to October each year.
- The goal is for Pond 4 to be empty on November 1 each year.

- Cannons would not be used during the wet season (January to March) while the ground is saturated, unless unseasonably dry conditions occur.

Measure 6: Metal plates or rubber matting would be installed in any area where equipment must cross drainages to avoid soil disturbance.

Measure 7: The contractor would comply with all permit conditions listed in the CWA Section 404 Nationwide Permit 12 and the CWA Section 401 Water Quality Certification (See Appendix C)..

4.3.2 No Action Alternative

Under the No Action Alternative, Beale AFB would continue to use the existing 40-acre wastewater irrigation field. Site 13 treated groundwater would continue to be routed to the WWTP and on to Pond 4. Once the new WDRs are issued in 2009, irrigation of the golf course with WWTP effluent would cease and the golf course would no longer have a source of irrigation water. Above-average rainfall could cause Pond 4 to fill to capacity prior to the end of the rainy season. Beale AFB would be forced to discharge to Hutchinson Creek, violating new WDRs. Effluent concentrations may adversely impact surface water quality.

4.4 Safety and Military Munitions Response Program

A significant impact would occur if the Proposed Action were to substantially increase risks associated with the safety of Beale AFB personnel, contractors, or the local community; or substantially hinder the ability to respond to an emergency. Impacts were assessed based on the potential effects of construction activities.

4.4.1 Proposed Action Safety

Short-term, minor direct adverse effects would be expected from the Proposed Action. Implementation of the Proposed Action would slightly increase the short-term risk associated with construction activities at Beale AFB during the normal workday because the level of such activity would increase. Contractors would be required to establish and maintain safety programs. Projects associated with the Proposed Action would not be expected to pose a safety risk to base personnel or activities because the contractor would be required to follow construction site health and safety plans. The proposed construction projects would enable the base to meet future mission objectives and conduct or meet mission requirements in a safe operating environment.

Military Munitions Response Program

During any intrusive activities on base, workers would have the potential to encounter UXO or Chemical Agent Identification Sets. No intrusive work would occur within the project area that falls within MMRP site XU634. Intrusive work would occur within a small portion of the northwest corner of ED598. The intrusive work that would occur within this area includes relocation of a cattle fence and a small area of grading. The Beale AFB Safety Office determined that there is a low risk of encountering MEC at ED598. Therefore, an Explosive Safety Submission for this project is not required to be submitted to the DoD Explosives Safety Board. Contractors would be required to comply with the Environmental Protection Measures for MMRP (see below) thereby reducing impacts to less than significant.

Environmental Protection Measures

Measure 1 Prior to construction, work must be coordinated through the Base Safety Office. If any suspected military munitions related material is found, workers must immediately stop work in the area, move personnel away from the site, and contact the Beale Explosive Ordnance Disposal (EOD) flight. Workers should not touch or attempt to remove any material suspected to be military munitions related.

Measure 2 Construction contractors would be required to develop a construction site health and safety plan.

4.4.2 No Action Alternative

Under the No Action Alternative, there would be no change in or effects on construction worker safety.

5 Cumulative and Adverse Impacts

Cumulative impacts on environmental resources result from incremental effects of the Proposed Action, when combined with other past, present, and reasonably foreseeable future projects in the area. Cumulative impacts can result from individually minor, but collectively substantial, actions undertaken over a period of time by various agencies (Federal, state, and local) or individuals. Informed decision-making is served by consideration of cumulative impacts resulting from projects that are proposed, under construction, recently completed, or anticipated to be implemented in the reasonably foreseeable future.

Table 5-1 summarizes potential cumulative effects on resources from the Proposed Action, when combined with other past, present, and future activities. No significant impacts on the environment would be anticipated from the Proposed Action in conjunction with these activities.

5.1 Unavoidable Adverse Impacts

Unavoidable adverse impacts would result from implementation of the Proposed Action. None of these impacts would be significant.

Biological Resources. The Proposed Action would result in minimal loss of vegetation and wildlife habitat. Because implementation of the Proposed Action would result in temporary or very minor effects on other resources on Beale AFB, the Proposed Action would not contribute to a substantial cumulative effect on other biological resources.

Energy. The use of nonrenewable resources is an unavoidable occurrence, although not considered significant. The Proposed Action would require the use of fossil fuels, a nonrenewable natural resource. Energy supplies, although relatively small, would be committed to the Proposed Action or No Action Alternative.

Table 5-1. Cumulative Effects on Resources

Resource	Past Actions	Present Actions	Proposed Action	Known Future Actions	Cumulative Effects
Air Quality	Emissions from aircraft, vehicles, and stationary equipment. Potential dust generation during soil removal, site grading, and construction.	Potential dust generation during soil removal, site grading, and construction.	Potential dust generation during soil removal, site grading, and construction.	Potential dust generation during soil removal, site grading, and construction.	No formal conformity analysis required. Actions would be <i>de minimus</i> . Effect not significant.
Biological Resources	Degraded historic habitat of sensitive and common wildlife species. Minor disturbance of vegetation by construction. Direct and indirect effects on T&E species. Effects compensated through consultation with USFWS.	Minor disturbance of vegetation by construction. Not likely to adversely affect T&E species.	Minor disturbance of vegetation by construction. Not likely to adversely affect T&E species.	Minor disturbance of vegetation by construction. Direct and indirect effects on T&E species. Effects compensated through consultation with USFWS.	Permanent loss of vegetation and low quality habitat. Direct and indirect effects on T&E species. Effects compensated through consultation with USFWS. Effects not significant.
Safety and MMRP	Short-term effects on construction workers from construction activities. Projects occur on MMRP sites. Potential MEC is encountered.	Short-term effects on construction workers from construction activities. Projects occur on MMRP sites.	Short-term effects on construction workers from construction activities. Not located on identified MMRP site..	Short-term effects on construction workers from construction activities and potential MEC. Projects occur on MMRP sites.	Construction site health and safety plans and base safety/DDESB approval of construction projects on MMRP sites result in no significant effect.

Table 5-1. Cumulative Effects on Resources

Resource	Past Actions	Present Actions	Proposed Action	Known Future Actions	Cumulative Effects
Water Resources	Surface water quality moderately impacted by development.	Surface water quality moderately impacted by development.	Potential sedimentation from construction activities.	Potential sedimentation from construction activities and minor increase in percentage of impervious surface area.	Use of best management practices and CWA permit approval results in negligible effects to water resources.
	CWA permits obtained for impacts to WoUS.	CWA permits obtained for impacts to WoUS.	CWA permit obtained for impacts to WoUS.	CWA permits obtained for impacts to WoUS.	Effect not significant.

MEC – Munitions and Explosives of Concern
MMRP – Military Munitions Response Program
WoUS – Waters of the U.S.

DDESB – Department of Defense Explosives Safety Board
CWA – Clean Water Act

5.2 Compatibility of the Proposed Action and Alternatives with the Objectives of Federal, Regional, State, and Local Land Use Plans, Policies, and Controls

Impacts on the ground surface as a result of the Proposed Action would occur entirely within the boundaries of Beale AFB. Construction activities would not result in any significant or incompatible land use changes on- or off-Base. The proposed projects have been sited according to future land use zones. Consequently, construction activities would not be in conflict with future base land use policies or objectives. The Proposed Action would not conflict with any applicable off-base land use ordinances or designated clear zones.

5.3 Irreversible and Irretrievable Commitments of Resources

Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that the use of these resources would have on future generations. Irreversible effects primarily result from use or destruction of a specific resource that cannot be replaced within a reasonable time frame (e.g., energy and minerals).

The irreversible and irretrievable commitment of resources that would result from implementation of the Proposed Action involve the consumption of material resources used for construction, energy resources, biological resources, and human labor resources. The loss of these resources is considered to be permanent.

Material Resources. Material resources used for the Proposed Action include building materials (for construction of facilities), concrete and asphalt (for roads), and various material supplies (for infrastructure). Most of the materials that would be consumed are not in short supply, would not limit other unrelated construction activities, and would not be considered significant.

Energy Resources. Energy resources utilized for the Proposed Action would be irretrievably lost. These include petroleum-based products (e.g., gasoline and diesel) and electricity. During construction, gasoline and diesel would be used for the operation of construction vehicles. During operations, there would be a slight increase in the use of electricity. Consumption of these energy resources would not place a significant demand on their availability in the region. Therefore, no significant impacts would be expected.

Biological Resources. Construction activities under the Proposed Action would result in a loss of approximately 59 acres of nonnative grassland vegetation. This community is abundant and would not represent a loss of significant wildlife habitat. Therefore, no significant impacts would be expected.

6 Consultation and Coordination

The following is a list of Federal and state agencies contacted during preparation of the EA. Individual groups were contacted for background information, consultation, and general input.

Federal

- U.S. Fish and Wildlife Service – Mr. Richard Montgomery

State

- California Regional Water Quality Control Board – Mr. Robert Reeves and Mr. Pat Gillum

7 List of Preparers

This EA has been prepared by Beale AFB. The individuals who contributed to the preparation of this document are listed below.

Ms. Rebecca Evans, REM
Environmental Impact Analysis Manager
B.S. Biology
M.A.S. Environmental Policy and Management
Years of Experience: 10

Mr. Ed Wydra, PE
Water and Wastewater Program Manager
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M.A. Management and Supervision
M.S. Engineering Management
Years of Experience: 12

Mr. Richard Relyea
Water and Wastewater Program Contract Support
B.S. Mechanical Engineering
Years of Experience: 7

8 References

- BAFB 2008a Integrated Natural Resources Management Plan Beale Air Force Base, California.
- BAFB 2008b General Plan Beale Air Force Base California. Prepared by Higginbotham/Briggs & Associates.
- BAFB 2008c Land Based Water Discharge Project NLAA.
- BAFB 2009 Beale Air Force Base Land-Based Discharge System Revised Report of Waste Discharge . Prepared by e2M, Inc.
- BAFB 2005 Supporting Information for the Threatened and Endangered Species Work Plan. Attachment 2 from Beale Air Force Base *Integrated Natural Resources Management Plan*.
- BAFB 2001 Environmental Assessment Vernal Pool Restoration Beale Air Force Base, California. 2001.
- CARB 2006 California Air Resources Board (CARB) 2006. Area Designations. Available online: <<http://www.arb.ca.gov/desig/adm/adm.htm>>. Accessed January 15, 2007.
- CEC 2006 California Energy Commission (CEC). 2006. *Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004*. Available online: <<http://www.energy.ca.gov/2006publications/CEC-600-2006-013/CEC-600-2006-013-SF.PDF>>. Accessed March 27, 2009.
- CH2M Hill 2007a Environmental Restoration Program Basewide Groundwater Monitoring Program 2006 Annual Report. February 2007.
- Foothill 2004 Beale Air Force Base Anti-Terrorism/Force Protection Upgrades Wetland Delineation Report. 2004.
- Sawyer and Keeler-Wolf 1995 A Manual of California Vegetation. California Native Plant Society Press: Sacramento, CA. 1995.
- URS 2007 Comprehensive Site Evaluation Phase I Final Report, Beale Air Force Base.
- USEPA 2005 U.S. Environmental Protection Agency (USEPA). 2007. Green Book Nonattainment Areas for Criteria Pollutants. Available

online: <<http://www.epa.gov/oar/oaqps/greenbk/>>. Accessed January 17, 2007.

Appendix A

Emissions Calculations

Road Construction Emissions Model, Version 6.3.1

Emission Estimates for -> Land Based Discharge										
Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	CO2 (lbs/day)
Grubbing/Land Clearing	2.9	13.8	24.8	51.2	1.2	50.0	11.5	1.1	10.4	1,974.0
Grading/Excavation	2.1	8.2	15.8	50.9	0.9	50.0	11.3	0.9	10.4	1,331.0
Drainage/Utilities/Sub-Grade	1.0	3.3	5.7	50.5	0.5	50.0	10.8	0.4	10.4	428.7
Paving	-	-	-	-	-	-	-	-	-	-
Maximum (pounds/day)	2.9	13.8	24.8	51.2	1.2	50.0	11.5	1.1	10.4	1,974.0
Total (tons/construction project)	0.0	0.1	0.2	0.9	0.0	0.9	0.2	0.0	0.2	12.1
Notes:	Project Start Year -> 2009									
	Project Length (months) -> 2									
	Total Project Area (acres) -> 76									
	Maximum Area Disturbed/Day (acres) -> 5									
	Total Soil Imported/Exported (yd ³ /day)-> 0									

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.

Emission Estimates for -> Land Based Discharge										
Project Phases (Metric Units)	ROG (kgs/day)	CO (kgs/day)	NOx (kgs/day)	Total PM10 (kgs/day)	Exhaust PM10 (kgs/day)	Fugitive Dust PM10 (kgs/day)	Total PM2.5 (kgs/day)	Exhaust PM2.5 (kgs/day)	Fugitive Dust PM2.5 (kgs/day)	CO2 (kgs/day)
Grubbing/Land Clearing	1.3	6.3	11.3	23.3	0.5	22.7	5.2	0.5	4.7	897.3
Grading/Excavation	0.9	3.7	7.2	23.2	0.4	22.7	5.1	0.4	4.7	605.0
Drainage/Utilities/Sub-Grade	0.4	1.5	2.6	22.9	0.2	22.7	4.9	0.2	4.7	194.8
Paving	-	-	-	-	-	-	-	-	-	-
Maximum (kilograms/day)	1.3	6.3	11.3	23.3	0.5	22.7	5.2	0.5	4.7	897.3
Total (megagrams/construction project)	0.0	0.1	0.1	0.8	0.0	0.8	0.2	0.0	0.2	11.0
Notes:	Project Start Year -> 2009									
	Project Length (months) -> 2									
	Total Project Area (hectares) -> 31									
	Maximum Area Disturbed/Day (hectares) -> 2									
	Total Soil Imported/Exported (meters ³ /day)-> 0									

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.

FUGITIVE DUST CONTROL

Prevention

Fugitive dust control strategies are composed of a balance of available dust mitigation techniques applied on an as needed basis by construction site supervision to

prevent dust from exiting the property,

prevent visible emissions from exceeding opacity regulations, and

prevent public nuisance.

This implies the use of adequate measures during the appropriate evolution of each construction activity and may include wind breaks and barriers, frequent water applications, application of soil additives, control of vehicle access, vehicle speed restrictions, covering of piles, use of gravel at site exit points to remove caked on dirt from tires and tracks, washing of equipment at the end of each work day and prior to site removal, wet sweeping of public thoroughfares, and work stoppage.

I. FRAQMD RULES AND REGULATIONS

FRAQMD RULE 3.0 - VISIBLE EMISSIONS (Adopted 6/91)

As provided by Section 41701 of the California Health and Safety Code, a person shall not discharge into the atmosphere from any single source of emissions whatsoever, any air contaminants for a period or periods aggregating more than three minutes in any one hour which is:

As dark or darker in shade as that designated as No. 2 on the Ringlemen Chart, as published by the United States Bureau of Mines; or

Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in Subsection 'a' above.

Enforcement: The District has trained staff capable of performing a Visible Emissions Evaluation (VEE). VEE courses are offered to regulators and the regulated community (for a fee) at regular intervals by staff of the California Air Resources Board.

FRAQMD RULE 3.16 - FUGITIVE DUST EMISSIONS (Adopted 4/11/94)

A. PURPOSE

The purpose of this Rule is to reasonably regulate operations which periodically may cause fugitive dust emissions into the atmosphere.

B. DEFINITION

For the purpose of this Rule, the following definitions shall apply:

B.1 Fugitive Dust: Solid airborne matter emitted from any non-combustion source.

B.2 Emergency: Any act of God, but only if the owner of the property from which fugitive dust emissions originate establishes for the Feather River Air Quality Management District, by a preponderance of evidence, that he or she took reasonable precautions in light of the relevant facts and circumstances to

minimize emissions.

B.3 Property Line: Adjacent properties which are owned by the same person shall be considered the same property for the purpose of determining the property line.

C. REQUIREMENTS

A person shall take every reasonable precaution not to cause or allow the emissions of fugitive dust from being airborne beyond the property line from which the emission originates, from any construction, handling or storage activity, or any wrecking, excavation, grading, clearing of land or solid waste disposal operation.

Reasonable precautions shall include, but are not limited to:

C.1 use, where possible, of water or chemicals for control of dust in the demolition of existing buildings or structures, construction operations, construction of roadways, or the clearing of land;

C.2 application of asphalt, oil, water, or suitable chemical on dirt roads, material stockpiles, and other surfaces which can give rise to airborne dusts;

C.3 other means approved by the Air Pollution Control Officer.

D. EXEMPTIONS

The provisions of this Rule shall not apply to the following:

D.1 Agricultural Operations

D.2 Currently unworked land designated as reclaimed for agriculture

D.3 An Emergency

D.4 Unpaved roads open to public travel (this inclusion shall not apply to industrial or commercial facilities).

Sources: FRAQMD Indirect Source Review Guidelines and Best Available Mitigation Measures compiled by the air districts of the Greater Sacramento Region and approved for implementation by the FRAQMD Board of Directors.

All grading operations on a project should be suspended when winds exceed 20 miles per hour or when winds carry dust beyond the property line despite implementation of all feasible dust control measures.

Construction sites shall be watered as directed by the Department of Public Works or Air Quality Management District and as necessary to prevent fugitive dust violations.

An operational water truck should be onsite at all times. Apply water to control dust as needed to prevent visible emissions violations and offsite dust impacts.

Onsite dirt piles or other stockpiled particulate matter should be covered, wind breaks installed, and water and/or soil stabilizers employed to reduce wind blown dust emissions. Incorporate the use of approved non-toxic soil stabilizers according to manufacturer's specifications to all inactive construction areas.

All transfer processes involving a free fall of soil or other particulate matter shall be operated in such a manner as to minimize the free fall distance and fugitive dust emissions.

Apply approved chemical soil stabilizers according to the manufacturers' specifications, to all-inactive construction areas (previously graded areas that remain inactive for 96 hours) including unpaved roads and employee/equipment parking areas.

To prevent track-out, wheel washers should be installed where project vehicles and/or equipment exit onto paved streets from unpaved roads. Vehicles and/or equipment shall be washed prior to each trip. Alternatively, a gravel bed may be installed as appropriate at vehicle/equipment site exit points to effectively remove soil buildup on tires and tracks to prevent/diminish track-out.

Paved streets shall be swept frequently (water sweeper with reclaimed water recommended; wet broom) if soil material has been carried onto adjacent paved, public thoroughfares from the project site.

Provide temporary traffic control as needed during all phases of construction to improve traffic flow, as deemed appropriate by the Department of Public Works and/or Caltrans and to reduce vehicle dust emissions. An effective measure is to enforce vehicle traffic speeds at or below 15 mph.

Reduce traffic speeds on all unpaved surfaces to 15 miles per hour or less and reduce unnecessary vehicle traffic by restricting access. Provide appropriate training, onsite enforcement, and signage.

Reestablish ground cover on the construction site as soon as possible and prior to final occupancy, through seeding and watering.

Disposal by Burning: Open burning is yet another source of fugitive gas and particulate emissions and shall be prohibited at the project site. No open burning of vegetative waste (natural plant growth wastes) or other legal or illegal burn materials (trash, demolition debris, et. al.) may be conducted at the project site. Vegetative wastes should be chipped or delivered to waste to energy facilities (permitted biomass facilities), mulched, composted, or used for firewood. It is unlawful to haul waste materials offsite for disposal by open burning.

Appendix B
Concurrence from
U.S Fish and Wildlife Service



United States Department of the Interior



FISH AND WILDLIFE SERVICE

Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846

In reply refer to:
81420-2009-1-0255-1

JAN 7 2009

Joni L. Gerry
Chief, Asset Management Flight
9 CES/CEV
6601 B Street
Beale AFB, California 95903-1708

Subject: Request for Concurrence with Determination of Not Likely to Adversely Affect for the Land Based Water Discharge Project, Beale Air Force Base, Yuba County, California

Dear Ms. Gerry:

This letter is in response to your December 3, 2008, letter, received December 8, 2008, requesting concurrence (request) with a determination of not likely to adversely affect (NLAA) federally-listed species from the U.S. Fish and Wildlife Service (Service) for the Land Based Water Discharge Project (proposed project) located on Beale Air Force Base (Beale AFB), in Yuba County, California. At question are the possible impacts of the proposed project on the federally-threatened vernal pool fairy shrimp (*Branchinecta lynchi*) and the federally-endangered vernal pool tadpole shrimp (*Lepidurus packardii*) (referred to jointly as vernal pool crustaceans). This response is provided pursuant to section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act), and in accordance with the regulations governing interagency consultations (50 CFR §402). The Service has reviewed your December 3, 2008, request; the *Land Based Water Discharge Project at Beale Air Force Base, California, Informal Consultation*, package; the June 11, 2008 and October 14, 2008, site visits by Rocky Montgomery (Service); and other information on file at the Sacramento Fish and Wildlife Office.

Beale AFB plans to construct a field of irrigation cannons in order to land apply treated waste water produced by the base's on-site water treatment facility. The proposed project site is located in the southwest corner of the Beale AFB.

Beale AFB currently stores its treated waste water generated by the base water treatment facility in a large holding pond called "Pond 4". Beale AFB's current Waste Discharge Requirements (Order No. 5-01-087) (WDR) requires a portion of the treated waste water to be land applied, while the remainder of the treated waste water is discharged to Hutchinson Creek. Beale AFB

land applies a portion of the treated waste water for irrigation of the base's golf course and a water cannon field west of Pond 4. The WDR governing the base's waste water effluent will change on April 1, 2009, and following this date, all waste water effluent will be land applied.

The proposed project intends to develop two adjacent parcels of land, which will contain a total of eight additional water cannons. The WDR issued by the California Regional Water Quality Control Board (CRWQCB) state that treated waste water shall be managed to control run off and prevent discharge to surface water. A water main and electrical conduit will tap into existing utilities at the pump facility on the western side of Pond 4. The electrical conduit will be entirely buried except where it bridges a drainage ditch east of Pond 4. The water main will be almost entirely surface installed except for the section of land between Parcel A (50.1 acres) and Parcel B (23.6 acres) where it will be buried 3 feet (1 meter) deep. The section of land between Parcel A and Parcel B is a drainage swale. Burying the water main in this section will ensure that the occasional sheet flow the swale experiences in the wet season is not disrupted (see figures on file, Service file 81420-2009-I-0255).

The WDR issued by the CRWQCB state that treated waste water shall be managed to control run-off and prevent discharge into surface water. To meet these requirements, Beale AFB will construct three foot wide, one foot high earthen berms around the perimeter of both parcels; the berms will be constructed of onsite soil.

All work will be done during the dry season, and erosion control best management practices (BMPs) from the Beale AFB Storm Water Pollution Prevention Program (2008) will be implemented.

A Drain Pit will be installed at the lowest point along the pipeline. The Drain Pit will allow Waste Water technicians to relieve pressure in the line during servicing or repairs. The use of reclaimed waste water for irrigation must comply with the reclamation requirements of Title 22, Division 4, CCR (Section 60301 et seq.). Therefore, the new waste water cannon field will be managed in the same manner that the existing waste water cannon field is currently managed:

- Cannons will be shut off 24 hours prior to a storm event, and remain off for at least 24 hours after the storm.
- Cannons will be shut off if wind velocities exceed 30 miles per hour (mph).
- Signs will be posted that indicate the use of reclaimed water at the site.
- Parcels will be graded to prevent ponding.
- Technicians will monitor and inspect parcels for soil saturation.
- The majority of the water will be sprayed from June to October each year.

- The goal is for Pond 4 to be empty on November 1 each year.
- Cannons will not be used during the wet season (January to March) while the ground is saturated, unless unseasonably dry conditions occur.

During construction a staging area will be set up on a gravel pad south of Pond 4. The staging area will be used for storing equipment and materials for the proposed project. The construction equipment will access the proposed project via the levee road surrounding Pond 4 and an existing dirt access road currently used by ground water monitoring technicians.

A cattle fence runs through the proposed project site. This fence will be moved and additional fencing will be installed in order to exclude any cattle from the proposed site. The cattle fence will consist of metal T-posts, five-strand cattle wire, and a standard cattle gate with wooden posts. Wooden posts will also be installed at all of the corners of the fence. The wood posts will be installed with hand tools and will be no more than 3 feet in depth. Concrete surface anchors will be used to secure the T-posts within 25 feet of drainages to avoid soil disturbance. T-posts outside of drainages will be hand driven one foot deep.

After reviewing the information provided, the Service concurs with your determination that the proposed project, as described, is not likely to adversely affect the federally-listed vernal pool crustaceans, or any other federally-listed species. There are no vernal wetland features within the proposed project parcels. Those vernal wetlands that are approximate to the parcels are either up-slope from the parcels, or are greater than 250' from the proposed project. This concurrence is provided specific to this action area, and for the proposed project action only as originally described within the request.

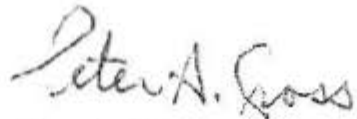
This concludes the Service's review of the proposed project and no further coordination with the Service under the Act is necessary at this time. Please note, however, that this letter does not authorize take of listed species. The Service has determined that the proposed project will not likely result in "take" of vernal pool crustaceans. Section 9 of the Act prohibits the "take" (e.g., harm, harass, pursue, injure, kill) of federally-listed wildlife species. As provided in 50 CFR §402.14, initiation of formal consultation is required where there is discretionary Federal involvement or control over the action (or is authorized by law) and if: (1) new information reveals the effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this review; (2) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (3) a new species is listed or critical habitat designated that may be affected by the action.

Ms. Joni L. Gerry

4

If you have any questions regarding this response for the Land Based Water Discharge Project, please contact Rocky Montgomery or Jana Milliken, Branch Chief, Sacramento Valley Branch at the letterhead address or (916) 414-6645.

Sincerely,

A handwritten signature in black ink that reads "Peter A. Cross". The signature is written in a cursive style with a large, stylized "P" and "C".

Peter A. Cross
Deputy Assistant Field Supervisor

cc:

Ms. Kirsten Christopherson, Beale AFB, CA 95903-1712

Ms. Jamie Visinoni, Beale AFB, CA 95903-1712

Appendix C

Clean Water Act Section 401 Water Quality Certification and Section 404 Nationwide Permit



Linda S. Adams
Secretary for
Environmental
Protection

California Regional Water Quality Control Board
Central Valley Region
Karl E. Longley, ScD, P.E., Chair

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Arnold
Schwarzeneg
Governor

11 February 2009

Joni L. Gerry
Beale AFB
6601 B Street
Beale AFB, CA 95903-2641

**CLEAN WATER ACT §401 TECHNICALLY CONDITIONED WATER QUALITY
CERTIFICATION FOR DISCHARGE OF DREDGED AND/OR FILL MATERIALS FOR THE
LAND BASED WASTEWATER DISCHARGE PROJECT-BEALE AFB,
(WDID#5A58CR00062) YUBA COUNTY**

WATER QUALITY CERTIFICATION STANDARD CONDITIONS:

1. This certification action is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to §13330 of the California Water Code and §3867 of Title 23 of the California Code of Regulations (23 CCR).
2. This certification action is not intended and shall not be construed to apply to any discharge from any activity involving a hydroelectric facility requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license unless the pertinent certification application was filed pursuant to 23 CCR subsection 3855(b) and the application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.
3. The validity of any non-denial certification action shall be conditioned upon total payment of the full fee required under 23 CCR §3833, unless otherwise stated in writing by the certifying agency.
4. Certification is valid for the duration of the described project. Discharger shall notify the Regional Board in writing within 7 days of project completion.

ADDITIONAL TECHNICALLY CONDITIONED CERTIFICATION CONDITIONS:

In addition to the four standard conditions, the applicant shall satisfy the following:

1. Beale AFB shall notify the Board in writing of the start of any in-water activities.
2. Except for activities permitted by the U.S. Army Corps under §404 of the Clean Water Act, soil, silt, or other organic materials shall not be placed where such materials could pass into surface water or surface water drainage courses.

California Environmental Protection Agency



3. The discharge of petroleum products or other excavated materials to surface water is prohibited.
4. Activities shall not cause turbidity increases in surface water to exceed:
 - (a) where natural turbidity is between 0 and 5 Nephelometric Turbidity Units (NTUs), increases shall not exceed 1 NTU;
 - (b) where natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20 percent;
 - (c) where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTUs;
 - (d) where natural turbidity is greater than 100 NTUs, increases shall not exceed 10 percent.

Except that these limits will be eased during in-water working periods to allow a turbidity increase of 15 NTU over background turbidity as measured in surface waters 300 feet downstream from the working area. In determining compliance with the above limits, appropriate averaging periods may be applied provided that beneficial uses will be fully protected.

5. Activities shall not cause settleable matter to exceed 0.1 ml/l in surface waters as measured in surface waters 300 feet downstream from the project.
6. Activities shall not cause visible oil, grease, or foam in the work area or downstream.
7. All areas disturbed by project activities shall be protected from washout or erosion.
8. In the event that project activities result in the deposition of soil materials or creation of a visible plume in surface waters, the following monitoring shall be conducted immediately upstream and 300 feet downstream of the work site and the results reported to this office within two weeks:

Parameter	Unit	Type of Sample	Frequency of Sample
Turbidity	NTU	Grab	Every 4 hours during in water work
Settleable Material	ml/l	Grab	Same as above.

9. Beale AFB shall notify the Board immediately if the above criteria for turbidity, settleable matter, oil/grease, or foam are exceeded.
10. Beale AFB shall notify the Board immediately of any spill of petroleum products or other organic or earthen materials.
11. Beale AFB shall comply with all Department of Fish and Game 1600 requirements for the project.

12. Beale AFB must obtain coverage under the NPDES General Permit for Storm Water Discharges Associated with Construction Activities issued by the State Water Resources Control Board.

REGIONAL WATER QUALITY CONTROL BOARD CONTACT PERSON:

Patrick G. Gillum, Environmental Scientist
11020 Sun Center Drive #200
Rancho Cordova, California 95670-6114
(916) 464-4709
pgillum@waterboards.ca.gov

WATER QUALITY CERTIFICATION:

I hereby issue an order certifying that any discharge from Beale AFB, Land Based Wastewater Discharge Project (WDID#5A8CR00062) will comply with the applicable provisions of §301 ("Effluent Limitations"), §302 ("Water Quality Related Effluent Limitations"), §303 ("Water Quality Standards and Implementation Plans"), §306 ("National Standards of Performance"), and §307 ("Toxic and Pretreatment Effluent Standards") of the Clean Water Act. This discharge is also regulated under State Water Resources Control Board Water Quality Order No. 2003-0017 DWQ "Statewide General Waste Discharge Requirements For Dredged Or Fill Discharges That Have Received State Water Quality Certification (General WDRs)".

Except insofar as may be modified by any preceding conditions, all certification actions are contingent on (a) the discharge being limited and all proposed mitigation being completed in strict compliance with the applicant's project description and the attached Project Information Sheet, and (b) compliance with all applicable requirements of the Regional Water Quality Control Board's Water Quality Control Plan (Basin Plan).


PAMELA C. CREEDON
Executive Officer

Enclosure: Project Information

cc: U.S. Army Corps of Engineers, Sacramento
Dave Smith, Wetlands Section Chief (WTR-8), U.S. Environmental Protection Agency,
Region 9, San Francisco
U.S. Fish & Wildlife Service, Sacramento
Bill Orme, 401 Certification and Wetlands Unit Chief, State Water Resources Control Board,
Sacramento
Jeff Drongesen, Department of Fish and Game, Sacramento
Richard McHenry, CA Sportfishing Protection Alliance, Stockton

PROJECT INFORMATION

Application Date: 3 December 2008

Applicant: Joni L. Gerry
Beale AFB
6601 B Street
Beale AFB, CA 95903-2641

Project Name: Land Based Wastewater Discharge Project

Application Number: WDID#5A8CR00062

U.S. Army Corps File Number: Nationwide Permit #12

Type of Project: Wastewater Discharge Improvement Project

Project Location: Section 3, 4, 9, 10, Township 14 North, Range 5 East, MDB&M.
Latitude: 39.09° and Longitude: 121.41°.

County: Yuba County

Receiving Water(s) (hydrologic unit): Hutchinson Creek, Sacramento Hydrologic Basin,
Colusa Basin Hydrologic Unit #520.30, Sutter Bypass HA

Water Body Type: Streambed

Designated Beneficial Uses: The Basin Plan for the Central Valley Regional Board has designated beneficial uses for surface and ground waters within the region. Beneficial uses that could be impacted by the project include: Municipal and Domestic Water Supply (MUN); Agricultural Supply (AGR); Industrial Supply (IND); Hydropower Generation (POW); Groundwater Recharge, Water Contact Recreation (REC-1); Non-Contact Water Recreation (REC-2); Warm Freshwater Habitat (WARM); Cold Freshwater Habitat (COLD); and Wildlife Habitat (WILD).

Project Description (purpose/goal): The Land Based Wastewater Discharge Project (LBWWDP) consists of construction of a field of irrigation cannons in order to land apply treated wastewater produced by the base's on site water treatment facility. Beale AFB currently stores its treated wastewater generated by the base wastewater treatment facility in a large holding pond called "Pond 4." A portion of the treated wastewater is already land applied for irrigation to the base's golf course. Another portion of the treated wastewater is land applied by a similar water cannon field just west of Pond 4. Currently, when capacity for treated wastewater is exceeded, the base discharges the excess treated wastewater into Hutchinson Creek. Waste Discharge Requirements governing Beale's wastewater effluent will change on April 1, 2009, and following this date, all wastewater effluent will be land applied.

Land application of additional treated wastewater will keep the water levels of Pond 4 lower than current conditions. This will create additional storage capacity of wastewater during the wet season and eliminate the need to discharge treated wastewater to Hutchinson Creek.

The LBWWDP intends to develop two adjacent parcels of land, which will contain a total of eight additional water cannons. Parcel A will be 50.1 acres and contain six of the irrigation cannons, while parcel B will be 23.6 acres and contain two of the irrigation cannons. The Waste Discharge Requirements issued by the Central Valley Regional Water Quality Control Board (CVRWQCB) states that treated wastewater shall be managed to control run off and prevent discharge to surface water. To meet these requirements, Beale plans to construct three-foot wide, one-foot high earthen berms around the perimeter of both parcels; the berms will be constructed of onsite soil. The berms will fully contain the wastewater in the event of a flood and will prevent any discharge into nearby Hutchinson Creek.

A water main and an electrical conduit will tap into existing utilities at the pump facility on the western side of Pond 4. The entire electrical conduit will be buried except when it bridges over an existing drainage ditch.

A drain pit will be installed at the lowest point along the pipeline. The drain pit will allow wastewater technicians to relieve pressure in the line during servicing or repairs. The lowest point in the project area is the drainage swale between parcel A and parcel B. Special design features will be implemented to insure that drained treated wastewater does not enter Hutchinson Creek.

Preliminary Water Quality Concerns: The construction activities may impact surface waters with increased turbidity and settleable matter.

Proposed Mitigation to Address Concerns: Beale AFB will implement Best Management Practices (BMPs) to control sedimentation and erosion. All temporary affected areas will be restored to pre-construction contours and conditions upon completion of construction activities. Beale AFB will conduct turbidity and settleable matter testing during in water work, stopping work if Basin Plan criteria are exceeded or are observed.

Fill/Excavation Area: Approximately 71.6 cubic yards of clean soil will be removed and then replaced into 0.0169 acre of un-vegetated streambed.

Dredge Volume: None

U.S. Army Corps of Engineers Permit Number: Nationwide Permit #12

Department of Fish and Game Streambed Alteration Agreement: Beale AFB did not apply for a Streambed Alteration Agreement.

Possible Listed Species: None

Status of CEQA Compliance: The Central Valley Regional Water Quality Control Board issued a Notice of Exemption for this project on 4 February 2009.

Compensatory Mitigation: Complete restoration of disturbed area.

Application Fee Provided: Fees arising under section 13260 of the California Water Code cannot be charged to federal facilities engaged dredging projects which fall under a USACE 404 Permit; therefore, Beale AFB is exempt from the dredge and fill filing fee.

DISTRIBUTION LIST

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Sacramento District Office
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Bill Orme
State Water Resources Control Board
401 Certification and Wetlands Unit Chief
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Sacramento, CA 95814

Richard McHenry
CA Sportfishing Protection Alliance
3536 Rainier Avenue
Stockton, CA 95204



U S Army Corps of
Engineers
Sacramento District

Nationwide Permit Summary

33 CFR Part 330; Issuance of Nationwide
Permits - March 19, 2007 Includes
corrections of May 8, 2007 and addition of
regional conditions December 2007

12. Utility Line Activities. Activities required for the construction, maintenance, repair, and removal of utility lines and associated facilities in waters of the United States, provided the activity does not result in the loss of greater than 1/2 acre of waters of the United States.

Utility lines: This NWP authorizes the construction, maintenance, or repair of utility lines, including outfall and intake structures, and the associated excavation, backfill, or bedding for the utility lines, in all waters of the United States, provided there is no change in pre-construction contours. A "utility line" is defined as any pipe or pipeline for the transportation of any gaseous, liquid, liquefied, or slurry substance, for any purpose, and any cable, line, or wire for the transmission for any purpose of electrical energy, telephone, and telegraph messages, and radio and television communication. The term "utility line" does not include activities that drain a water of the United States, such as drainage tile or french drains, but it does apply to pipes conveying drainage from another area.

Material resulting from trench excavation may be temporarily sidecast into waters of the United States for no more than three months, provided the material is not placed in such a manner that it is dispersed by currents or other forces. The district engineer may extend the period of temporary side casting for no more than a total of 180 days, where appropriate. In wetlands, the top 6 to 12 inches of the trench should normally be backfilled with topsoil from the trench. The trench cannot be constructed or backfilled in such a manner as to drain waters of the United States (e.g., backfilling with extensive gravel layers, creating a french drain effect). Any exposed slopes and stream banks must be stabilized immediately upon completion of the utility line crossing of each waterbody.

Utility line substations: This NWP authorizes the construction, maintenance, or expansion of substation facilities associated with a power line or utility line in non-tidal waters of the United States, provided the activity, in combination with all other activities included in one single and complete project, does not result in the loss of greater than 1/2 acre of waters of the United States. This NWP does not authorize discharges into non-tidal wetlands adjacent to tidal waters of the United States to construct, maintain, or expand substation facilities.

Foundations for overhead utility line towers, poles, and anchors: This NWP authorizes the construction or maintenance of foundations for overhead utility line towers, poles, and anchors in all waters of the United States, provided the foundations are the minimum size necessary and separate footings for each tower leg (rather than a larger single pad) are used where feasible.

Access roads: This NWP authorizes the construction of access roads for the construction and maintenance of utility lines, including overhead power lines and utility line substations, in

non-tidal waters of the United States, provided the total discharge from a single and complete project does not cause the loss of greater than 1/2-acre of non-tidal waters of the United States. This NWP does not authorize discharges into non-tidal wetlands adjacent to tidal waters for access roads. Access roads must be the minimum width necessary (see Note 2, below). Access roads must be constructed so that the length of the road minimizes any adverse effects on waters of the United States and must be as near as possible to pre-construction contours and elevations (e.g., at grade corduroy roads or geotextile/gravel roads). Access roads constructed above pre-construction contours and elevations in waters of the United States must be properly bridged or culverted to maintain surface flows.

This NWP may authorize utility lines in or affecting navigable waters of the United States even if there is no associated discharge of dredged or fill material (See 33 CFR Part 322). Overhead utility lines constructed over section 10 waters and utility lines that are routed in or under section 10 waters without a discharge of dredged or fill material require a section 10 permit.

This NWP also authorizes temporary structures, fills, and work necessary to conduct the utility line activity. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if any of the following criteria are met: (1) the activity involves mechanized land clearing in a forested wetland for the utility line right-of-way; (2) a section 10 permit is required; (3) the utility line in waters of the United States, excluding overhead lines, exceeds 500 feet; (4) the utility line is placed within a jurisdictional area (i.e., water of the United States), and it runs parallel to a stream bed that is within that jurisdictional area; (5) discharges that result in the loss of greater than 1/10-acre of waters of the United States; (6) permanent access roads are constructed above grade in waters of the United States for a distance of more than 500 feet; or (7) permanent access roads are constructed in waters of the United States with impervious materials. (See general condition 27.) (Sections 10 and 404)

Note 1: Where the proposed utility line is constructed or installed in navigable waters of the United States (i.e., section 10 waters), copies of the pre-construction notification and NWP verification will be sent by the Corps to the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), for charting the utility line to protect navigation.

Note 2: Access roads used for both construction and maintenance may be authorized, provided they meet the terms and conditions of this NWP. Access roads used solely for construction of the utility line must be removed upon completion of the work, accordance with the requirements for temporary fills.

Note 3: Pipes or pipelines used to transport gaseous, liquid, lyescent, or slurry substances over navigable waters of the United States are considered to be bridges, not utility lines, and may require a permit from the U.S. Coast Guard pursuant to Section 9 of the Rivers and Harbors Act of 1899. However, any discharges of dredged or fill material into waters of the United States associated with such pipelines will require a section 404 permit (see NWP 15)

A. Nationwide Permit General Conditions

Note: To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as appropriate, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer. Prospective permittees should contact the appropriate Corps district office to determine if regional conditions have been imposed on an NWP. Prospective permittees should also contact the appropriate Corps district office to determine the status of Clean Water Act Section 401 water quality certification and/or Coastal Zone Management Act consistency for an NWP.

☐ 1. Navigation.

- ☐ (a) No activity may cause more than a minimal adverse effect on navigation.
- ☐ (b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.
- ☐ (c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

☐ 2. **Aquatic Life Movements.** No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. Culverts placed in streams must be installed to maintain low flow conditions.

☐ 3. **Spawning Areas.** Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

☐ 4. **Migratory Bird Breeding Areas.** Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

☐ 5. **Shellfish Beds.** No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48.

☐ 6. **Suitable Material.** No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).

☐ 7. **Water Supply Intakes.** No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

☐ 8. **Adverse Effects From Impoundments.** If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

☐ 9. **Management of Water Flows.** To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

☐ 10. **Fills Within 100-Year Floodplains.** The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

☐ 11. **Equipment.** Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

☐ 12. **Soil Erosion and Sediment Controls.** Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow.

☐ 13. **Removal of Temporary Fills.** Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

☐ 14. **Proper Maintenance.** Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety.

☐ 15. **Wild and Scenic Rivers.** No activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in

writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency in the area (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service).

☐ 16. **Tribal Rights.** No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

☐ 17. **Endangered Species.**

☐ (a) No activity is authorized under any NWP which is likely to jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed.

☐ (b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements.

☐ (c) Non-federal permittees shall notify the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that may be affected by the proposed work or that utilize the designated critical habitat that may be affected by the proposed work. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete pre-construction notification. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed activities will have "no effect" on listed species or critical habitat, or until Section 7 consultation has been completed.

☐ (d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species-specific regional endangered species conditions to the NWPs.

☐ (e) Authorization of an activity by a NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of

separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the U.S. FWS or the NMFS, both lethal and non-lethal "takes" of protected species are in violation of the ESA. Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the U.S. FWS and NMFS or their world wide Web pages at <http://www.fws.gov/> and <http://www.noaa.gov/fisheries.html> respectively.

☐ 18. **Historic Properties.**

☐ (a) In cases where the district engineer determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

☐ (b) Federal permittees should follow their own procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements.

☐ (c) Non-federal permittees must submit a pre-construction notification to the district engineer if the authorized activity may have the potential to cause effects to any historic properties listed, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the State Historic Preservation Officer or Tribal Historic Preservation Officer, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted and these efforts, the district engineer shall determine whether the proposed activity has the potential to cause an effect on the historic properties. Where the non-Federal applicant has identified historic properties which the activity may have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects or that consultation under Section 106 of the NHPA has been completed.

☐ (d) The district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA Section 106 consultation is required. Section 106 consultation is not required when the Corps determines that the activity does not have the potential to cause

effects on historic properties (see 36 CFR §800.3(a)). If NHPA section 106 consultation is required and will occur, the district engineer will notify the non-Federal applicant that he or she cannot begin work until Section 106 consultation is completed.

☐ (e) Prospective permittees should be aware that section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, explaining the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

☐ 19. Designated Critical Resource Waters. Critical resource waters include, NOAA-designated marine sanctuaries, National Estuarine Research Reserves, state natural heritage sites, and outstanding national resource waters or other waters officially designated by a state as having particular environmental or ecological significance and identified by the district engineer after notice and opportunity for public comment. The district engineer may also designate additional critical resource waters after notice and opportunity for comment.

☐ (a) Discharges of dredged or fill material into waters of the United States are not authorized by NWP 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, and 50 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

☐ (b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with general condition 27, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

☐ 20 Mitigation. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that adverse effects on the aquatic environment are minimal:

☐ (a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States

to the maximum extent practicable at the project site (i.e., on site).

☐ (b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.

☐ (c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10 acre and require pre-construction notification, unless the district engineer determines in writing that some other form of mitigation would be more environmentally appropriate and provides a project-specific waiver of this requirement. For wetland losses of 1/10 acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the aquatic environment. Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, wetland restoration should be the first compensatory mitigation option considered.

☐ (d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation, such as stream restoration, to ensure that the activity results in minimal adverse effects on the aquatic environment.

☐ (e) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2 acre, it cannot be used to authorize any project resulting in the loss of greater than 1/2 acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that a project already meeting the established acreage limits also satisfies the minimal impact requirement associated with the NWPs.

☐ (f) Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the establishment, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, riparian areas may be the only compensatory mitigation required. Riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

- ☐ (g) Permittees may propose the use of mitigation banks, in-lieu fee arrangements or separate activity-specific compensatory mitigation. In all cases, the mitigation provisions will specify the party responsible for accomplishing and/or complying with the mitigation plan.
- ☐ (h) Where certain functions and services of waters of the United States are permanently adversely affected, such as the conversion of a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse effects of the project to the minimal level.
- ☐ 21. **Water Quality.** Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA Section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.
- ☐ 22. **Coastal Zone Management.** In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.
- ☐ 23. **Regional and Case-By-Case Conditions.** The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.
- ☐ 24. **Use of Multiple Nationwide Permits.** The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.
- ☐ 25. **Transfer of Nationwide Permit Verifications.** If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:
- “When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.”
- _____
- (Transferee)
- _____
- (Date)
- ☐ 26. **Compliance Certification.** Each permittee who received an NWP verification from the Corps must submit a signed certification regarding the completed work and any required mitigation. The certification form must be forwarded by the Corps with the NWP verification letter and will include:
- ☐ (a) A statement that the authorized work was done in accordance with the NWP authorization, including any general or specific conditions;
- ☐ (b) A statement that any required mitigation was completed in accordance with the permit conditions; and
- ☐ (c) The signature of the permittee certifying the completion of the work and mitigation.
- ☐ 27. **Pre-Construction Notification.**
- ☐ (a) **Timing.** Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, as a general rule, will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:
- ☐ (1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or
- ☐ (2) Forty-five calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 17 that listed species or critical habitat might be affected or in the vicinity of the project, or to notify the Corps pursuant to general condition 18 that the activity may have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that is “no effect” on listed species or “no potential to cause effects” on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see

33 CFR 330.4(f) and/or Section 106 of the National Historic Preservation (see 33 CFR 330.4(g)) is completed. Also, work cannot begin under NWP 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee cannot begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

☐ (b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information:

☐ (1) Name, address and telephone numbers of the prospective permittee;

☐ (2) Location of the proposed project;

☐ (3) A description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause; any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. The description should be sufficiently detailed to allow the district engineer to determine that the adverse effects of the project will be minimal and to determine the need for compensatory mitigation. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the project and when provided result in a quicker decision.);

☐ (4) The PCN must include a delineation of special aquatic sites and other waters of the United States on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters of the United States, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many waters of the United States. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, where appropriate;

☐ (5) If the proposed activity will result in the loss of greater than 1/10 acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

☐ (6) If any listed species or designated critical habitat might be affected or is in the vicinity

of the project, or if the project is located in designated critical habitat, for non-Federal applicants the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work. Federal applicants must provide documentation demonstrating compliance with the Endangered Species Act; and

☐ (7) For an activity that may affect a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, for non-Federal applicants the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property. Federal applicants must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act.

☐ (c) Form of Pre-Construction Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is a PCN and must include all of the information required in paragraphs (b)(1) through (7) of this general condition. A letter containing the required information may also be used.

☐ (d) Agency Coordination:

☐ (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the project's adverse environmental effects to a minimal level.

☐ (2) For all NWP 48 activities requiring pre-construction notification and for other NWP activities requiring pre-construction notification to the district engineer that result in the loss of greater than 1/2-acre of waters of the United States, the district engineer will immediately provide (e.g., via facsimile transmission, overnight mail, or other expeditious manner) a copy of the PCN to the appropriate Federal or state offices (U.S. FWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Office (THPO), and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will then have 10 calendar days from the date the material is transmitted to telephone or fax the district engineer notice that they intend to provide substantive, site-specific comments. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame, but will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies'

concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

☐ (3) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

☐ (4) Applicants are encouraged to provide the Corps multiple copies of pre-construction notifications to expedite agency coordination.

☐ (5) For NWP 48 activities that require reporting, the district engineer will provide a copy of each report within 10 calendar days of receipt to the appropriate regional office of the NMFS.

☐ (e) In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. If the proposed activity requires a PCN and will result in a loss of greater than 1/10 acre of wetlands, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for projects with smaller impacts. The district engineer will consider any proposed compensatory mitigation the applicant has included in the proposal in determining whether the net adverse environmental effects to the aquatic environment of the proposed work are minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse effects on the aquatic environment are minimal, after considering mitigation, the district engineer will notify the permittee and include any conditions the district engineer deems necessary. The district engineer must approve any compensatory mitigation proposal before the permittee commences work. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure no more than minimal adverse effects on the aquatic environment. If the net adverse effects of the project on the aquatic environment (after consideration of the compensatory mitigation proposal) are determined by the district engineer to be minimal, the district engineer will provide a timely written response to the applicant. The response will state that the project can proceed under the terms and conditions of the NWP.

If the district engineer determines that the adverse effects of the proposed work are more than minimal, then the district engineer will notify the applicant either: (1) That the project does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (2) that the project is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level; or (3) that the project is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse effects occur to the aquatic environment, the activity will be authorized within the 45-day PCN period. The authorization will include the necessary conceptual or specific mitigation or a requirement that the applicant submit a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level. When mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan.

☐ (a) 28. Single and Complete Project. The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

B. Regional Conditions:

I. Sacramento District (All States, except Colorado)

1. When pre-construction notification (PCN) is required, the prospective permittee shall notify the Sacramento District in accordance with General Condition 27 using either the South Pacific Division Preconstruction Notification (PCN) Checklist or a completed application form (ENG Form 4345). In addition, the PCN shall include:

- a. A written statement explaining how the activity has been designed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States;
- b. Drawings, including plan and cross-section views, clearly depicting the location, size and dimensions of the proposed activity. The drawings shall contain a title block, legend and scale, amount (in cubic yards) and size (in acreage) of fill in Corps jurisdiction, including both permanent and temporary fills/structures. The ordinary high water mark or, if tidal waters, the high tide line should be shown (in feet), based on National Geodetic Vertical Datum (NGVD) or other appropriate referenced elevation; and
- c. Pre-project color photographs of the project site taken from designated locations documented on the plan drawing.

2. The permittee shall complete compensatory mitigation required by special conditions of the NWP verification before or concurrent with construction of the authorized activity, except when specifically determined to be impracticable by the Sacramento District. When project mitigation involves use of a mitigation bank or in-lieu fee program, payment shall be made before commencing construction.

3. The permittee shall record the NWP verification with the Registrar of Deeds or other appropriate official charged with the responsibility for maintaining records of title to or interest in real property against areas (1) designated to be preserved as part of mitigation for authorized impacts, including any associated covenants or restrictions, or (2) where structures such as boat ramps or docks, marinas, piers, and permanently moored vessels will be constructed in or adjacent to navigable waters (Section 10 and Section 404). The recordation shall also include a map showing the surveyed location of the authorized structure and any associated areas preserved to minimize or compensate for project impacts.
 4. The permittee shall place wetlands, other aquatic areas, and any vegetative buffers preserved as part of mitigation for impacts into a separate "preserve" parcel prior to discharging dredged or fill material into waters of the United States, except where specifically determined to be impracticable by the Sacramento District. Permanent legal protection shall be established for all preserve parcels, following Sacramento District approval of the legal instrument.
 5. The permittee shall allow Corps representatives to inspect the authorized activity and any mitigation areas at any time deemed necessary to determine compliance with the terms and conditions of the NWP verification. The permittee will be notified in advance of an inspection.
 6. For NWPs 29, 39, 40, 42, 43, 44, and 46, requests to waive the 300 linear foot limitation for intermittent or ephemeral waters of the U.S. shall include an evaluation of functions and services provided by the waterbody taking into account the watershed, measures to be implemented to avoid and minimize impacts, other measures to avoid and minimize that were found to be impracticable, and a mitigation plan for offsetting impacts.
 7. Road crossings shall be designed to ensure fish passage, especially for anadromous fisheries. Permittees shall employ bridge designs that span the stream or river, utilize pier or pile supported structures, or involve large bottomless culverts with a natural streambed, where the substrate and streamflow conditions approximate existing channel conditions. Approach fills in waters of the United States below the ordinary high water mark are not authorized under the NWPs, except where avoidance has specifically been determined to be impracticable by the Sacramento District.
 8. For NWP 12, clay blocks, bentonite, or other suitable material shall be used to seal the trench to prevent the unlined line from draining waters of the United States, including wetlands.
 9. For NWP 13, bank stabilization shall include the use of vegetation or other biotechnical design to the maximum extent practicable. Activities involving hard-armoring of the bank toe or slope requires submission of a PCN per General Condition 27.
 10. For NWP 23, the PCN shall include a copy of the signed Categorical Exclusion document and final agency determinations regarding compliance with Section 7 of the Endangered Species Act, Essential Fish Habitat under the Magnuson-Stevens Act, and Section 106 of the National Historic Preservation Act.
 11. For NWP 44, the discharge shall not cause the loss of more than 300 linear feet of streambed. For intermittent and ephemeral streams, the 300 linear foot limit may be waived in writing by the Sacramento District. This NWP does not authorize discharges in waters of the United States supporting anadromous fisheries.
 12. For NWPs 29 and 39, channelization or relocation of intermittent or perennial drainage, is not authorized, except when, as determined by the Sacramento District, the relocation would result in a net increase in functions of the aquatic ecosystem within the watershed.
 13. For NWP 33, temporary fills for construction access in waters of the United States supporting fisheries shall be accomplished with clean, washed spawning quality gravels where practicable as determined by the Sacramento District, in consultation with appropriate federal and state wildlife agencies.
 14. For NWP 46, the discharge shall not cause the loss of greater than 0.5 acres of waters of the United States or the loss of more than 300 linear feet of ditch, unless this 300 foot linear foot limit is waived in writing by the Sacramento District.
 15. For NWPs 29, 39, 40, 42, and 43, upland vegetated buffers shall be established and maintained in perpetuity, to the maximum extent practicable, next to all preserved open waters, streams and wetlands including created, restored, enhanced or preserved waters of the U.S., consistent with General Condition 20. Except in unusual circumstances, vegetated buffers shall be at least 50 feet in width.
 16. All NWPs except 3, 6, 20, 27, 32, 38, and 47, are revoked for activities in histosols and fens and in wetlands contiguous with fens. Fens are defined as slope wetlands with a histic epipedon that are hydrologically supported by groundwater. Fens are normally saturated throughout the growing season, although they may not be during drought conditions. For NWPs 3, 6, 20, 27, 32, and 38, prospective permittees shall submit a PCN to the Sacramento District in accordance with General Condition 27.
 17. For all NWPs, when activities are proposed within 100 feet of the point of groundwater discharge of a natural spring, prospective permittees shall submit a PCN to the Sacramento District in accordance with General Condition 27. A spring source is defined as any location where ground water emanates from a point in the ground. For purposes of this condition, springs do not include seeps or other discharges which lack a defined channel.
- ## II. California Only
1. In the Lake Tahoe Basin, all NWPs are revoked. Activities in this area shall be authorized under Regional General Permit 16 or through an individual permit.
 2. In the Primary and Secondary Zones of the Legal Delta, NWPs 29 and 39 are revoked. New development activities in the Legal Delta will be reviewed through the Corps' standard permit process.
- ## III. Nevada Only
1. In the Lake Tahoe Basin, all NWPs are revoked. Activities in this area shall be authorized under Regional General Permit 16 or through an individual permit.

IV. Utah Only

1. For all NWP, except NWP 47, prospective permittees shall submit a PCN in accordance with General Condition 27 for any activity, in waters of the United States, below 4217 feet mean sea level (msl) adjacent to the Great Salt Lake and below 4500 feet msl adjacent to Utah Lake.

2. A PCN is required for all bank stabilization activities in a perennial stream that would affect more than 100 linear feet of stream

3. For NWP 27, facilities for controlling stormwater runoff, construction of water parks such as kayak courses, and use of grout or concrete to construct in-stream structures are not authorized. A PCN is required for all projects exceeding 1500 linear feet as measured on the stream thalweg, using in stream structures exceeding 50 cubic yards per structure and/or incorporating grade control structures exceeding 1 foot vertical drop. For any stream restoration project, the post project stream sinuosity shall be appropriate to the geomorphology of the surrounding area and shall be equal to, or greater than, pre project sinuosity. Sinuosity is defined as the ratio of stream length to project reach length. Structures shall allow the passage of aquatic organisms, recreational water craft or other navigational activities unless specifically waived in writing by the District Engineer.

V. Colorado Only

1. Final Regional Conditions Applicable to Specific Nationwide Permits within Colorado.

a. Nationwide Permit Nos. 12 and 14, Utility Line Activities and Linear Transportation Projects. In the Colorado River Basin, utility line and road activities crossing perennial water or special aquatic sites require notification to the District Engineer in accordance with General Condition 27 (Pre-Construction Notification).

b. Nationwide Permit No. 13 Bank Stabilization. In Colorado, bank stabilization activities necessary for erosion prevention in streams that average less than 20 feet in width (measured between the ordinary high water marks) are limited to the placement of no more than 1/4 cubic yard of suitable fill* material per running foot below the plane of the ordinary high water mark. Activities greater than 1/4 cubic yard may be authorized if the permittee notifies the District Engineer in accordance with General Condition 27 (Pre-Construction Notification) and the Corps determines the adverse environmental effects are minimal. [* See (g) for definition of Suitable Fill]

c. Nationwide Permit No. 27 Aquatic Habitat Restoration, Establishment, and Enhancement Activities.

(1) For activities that include a fishery enhancement component, the Corps will send the Pre-Construction Notification to the Colorado Division of Wildlife (CDOW) for review. In accordance with General Condition 27 (Pre-Construction Notification), CDOW will have 10 days from the receipt of Corps notification to indicate that they will be commenting on the proposed project. CDOW will then have an additional 15 days after the initial 10-day period to

provide those comments. If CDOW raises concerns, the applicant may either modify their plan, in coordination with CDOW, or apply for a standard individual permit.

(2) For activities involving the length of a stream, the post-project stream sinuosity will not be significantly reduced, unless it is demonstrated that the reduction in sinuosity is consistent with the natural morphological evolution of the stream (sinuosity is the ratio of stream length to project reach length).

(3) Structures will allow the upstream and downstream passage of aquatic organisms, including fish native to the reach, as well as recreational water craft or other navigational activities, unless specifically waived in writing by the District Engineer. The use of grout and/or concrete in building structures is not authorized by this nationwide permit.

(4) The construction of water parks (i.e., kayak courses) and flood control projects are not authorized by this nationwide permit.

d. Nationwide Permits Nos. 29 and 39, Residential Developments and Commercial and Institutional Developments. A copy of the existing FEMA/locally-approved floodplain map must be submitted with the Pre-Construction Notification. When reviewing proposed developments, the Corps will utilize the most accurate and reliable FEMA/locally-approved pre-project floodplain mapping, not post-project floodplain mapping based on a CLOMR or LOMR. However, the Corps will accept revisions to existing floodplain mapping if the revisions resolve inaccuracies in the original floodplain mapping and if the revisions accurately reflect pre-project conditions.

2. Final Regional Conditions Applicable to All Nationwide Permits within Colorado

e. Removal of Temporary Fills. General Condition 13 (Removal of Temporary Fills) is amended by adding the following: When temporary fills are placed in wetlands in Colorado, a horizontal marker (i.e. fabric, certified weed-free straw, etc.) must be used to delineate the existing ground elevation of wetlands that will be temporarily filled during construction.

f. Spawning Areas. General Condition 3 (Spawning Areas) is amended by adding the following: In Colorado, all Designated Critical Resource Waters (see enclosure 1) are considered important spawning areas. Therefore, in accordance with General Condition 19 (Designated Critical Resource Waters), the discharge of dredged or fill material is not authorized by the following nationwide permits in these waters: NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, and 50. In addition, in accordance with General Condition 27 (Pre-Construction Notification), notification to the District Engineer is required for use of the following nationwide permits in these waters: NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37 and 38".

g. **Suitable Fill.** In Colorado, use of broken concrete as fill material requires notification to the District Engineer in accordance with General Condition 27 (Pre-Construction Notification). Permittees must demonstrate that soft engineering methods utilizing native or non-manmade materials are not practicable (with respect to cost, existing technology, and logistics), before broken concrete is allowed as suitable fill. Use of broken concrete with exposed rebar is prohibited in perennial waters and special aquatic sites.

h. **Invasive Aquatic Species.** General Condition 11 is amended by adding the following condition for work in perennial or intermittent waters of the United States: If heavy equipment is used for the subject project that was previously working in another stream, river, lake, pond, or wetland within 10 days of initiating work, one the following procedures is necessary to prevent the spread of New Zealand Mud Snails and other aquatic hitchhikers:

- (1) Remove all mud and debris from equipment (tracks, turrets, buckets, drags, teeth, etc.) and keep the equipment dry for 10 days. OR
- (2) Remove all mud and debris from Equipment (tracks, turrets, buckets, drags, teeth, etc.) and spray/soak equipment with either a 1:1 solution of Formula 409 Household Cleaner and water, or a solution of Sparquat 256 (5 ounces Sparquat per gallon of water). Treated equipment must be kept moist for at least 10 minutes. OR
- (3) Remove all mud and debris from equipment (tracks, turrets, buckets, drags, teeth, etc.) and spray/soak equipment with water greater than 120 degrees F for at least 10 minutes.

3. Final Regional Conditions for Revocation/Special Notification Specific to Certain Geographic Areas

i. **Fens:** All Nationwide permits, except permit Nos. 3, 6, 20, 27, 32, 38 and 47, are revoked in fens and wetlands adjacent to fens. Use of nationwide permit Nos. 3, 20, 27 and 38, requires notification to the District Engineer, in accordance with General Condition 27 (Pre-Construction Notification), and the permittee may not begin the activity until the Corps determines the adverse environmental effects are minimal. The following defines a fen:

Fen soils (histosols) are normally saturated throughout the growing season, although they may not be during drought conditions. The primary source of hydrology for fens is groundwater. Histosols are defined in accordance with the U.S. Department of Agriculture, Natural Resources Conservation Service publications on Keys to Soil Taxonomy and Field Indicators of Hydric Soils in the United States (<http://soils.usda.gov/technical/classification/taxonomy/>).

j. **Springs:** Within the state of Colorado, all NWP's, except permit 47 (original 'C'), require preconstruction notification pursuant to General Condition 27 for discharges of dredged or fill material within 100 feet of the point of groundwater discharge of natural springs. A

spring source is defined as any location where groundwater emanates from a point in the ground. For purposes of this regional condition, springs do not include seeps or other discharges which do not have a defined channel.

4. Additional Information

The following provides additional information regarding minimization of impacts and compliance with existing general Conditions:

a. Permittees are reminded of the existing General Condition No. 6 which prohibits the use of unsuitable material. Organic debris, building waste, asphalt, car bodies, and trash are not suitable material. Also, General Condition 12 requires appropriate erosion and sediment controls (i.e. all fills must be permanently stabilized to prevent erosion and siltation into waters and wetlands at the earliest practicable date). Streambed material or other small aggregate material placed along a bank as stabilization will not meet General Condition 12. Also, use of erosion control mats that contain plastic netting may not meet General Condition 12 if deemed harmful to wildlife.

b. **Designated Critical Resource Waters in Colorado.** In Colorado, a list of designated Critical Resource Waters has been published in accordance with General Condition 19 (Designated Critical Resource Waters). This list will be published on the Albuquerque District Regulatory home page (<http://www.spa.usace.army.mil/reg/>)

c. **Federally-Listed Threatened and Endangered Species.** General condition 17 requires that non-federal permittees notify the District Engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project. Information on such species, to include occurrence by county in Colorado, may be found at the following U.S. Fish and Wildlife Service website: http://www.fws.gov/mountain%20Prairie/endspp/name_county_search.htm

C. Further Information

1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP.
2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.
3. NWPs do not grant any property rights or exclusive privileges.
4. NWPs do not authorize any injury to the property or rights of others.
5. NWPs do not authorize interference with any existing or proposed Federal project.

D. Definitions

Best management practices (BMPs): Policies, practices, procedures, or structures implemented to mitigate the adverse environmental effects on surface water quality resulting from development. BMPs are categorized as structural or non-structural.

Compensatory mitigation: The restoration, establishment (creation), enhancement, or preservation of aquatic resources for the purpose of compensating for unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.

Currently serviceable: Useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.

Discharge: The term "discharge" means any discharge of dredged or fill material.

Enhancement: The manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

Ephemeral stream: An ephemeral stream has flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.

Establishment (creation): The manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area.

Historic Property: Any prehistoric or historic district, site (including archaeological site), building, structure, or other object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria (36 CFR part 60).

Independent utility: A test to determine what constitutes a single and complete project in the Corps regulatory program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

Intermittent stream: An intermittent stream has flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.

Loss of waters of the United States: Waters of the United States that are permanently adversely affected by filling, flooding, excavation, or drainage because of the regulated activity. Permanent adverse effects include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody. The acreage of loss of waters of the United States is a threshold measurement of the impact to

jurisdictional waters for determining whether a project may qualify for an NWP; it is not a net threshold that is calculated after considering compensatory mitigation that may be used to offset losses of aquatic functions and services. The loss of stream bed includes the linear feet of stream bed that is filled or excavated. Waters of the United States temporarily filled, flooded, excavated, or drained, but restored to pre-construction contours and elevations after construction, are not included in the measurement of loss of waters of the United States. Impacts resulting from activities eligible for exemptions under Section 404(f) of the Clean Water Act are not considered when calculating the loss of waters of the United States.

Non-tidal wetland: A non-tidal wetland is a wetland that is not subject to the ebb and flow of tidal waters. The definition of a wetland can be found at 33 CFR 328.3(b). Non-tidal wetlands contiguous to tidal waters are located landward of the high tide line (i.e., spring high tide line).

Open water: For purposes of the NWPs, an open water is any area that in a year with normal patterns of precipitation has water flowing or standing above ground to the extent that an ordinary high water mark can be determined. Aquatic vegetation within the area of standing or flowing water is either non-emergent, sparse, or absent. Vegetated shallows are considered to be open waters. Examples of "open waters" include rivers, streams, lakes, and ponds.

Ordinary High Water Mark: An ordinary high water mark is a line on the shore established by the fluctuations of water and indicated by physical characteristics, or by other appropriate means that consider the characteristics of the surrounding areas (see 33 CFR 328.3(e)).

Perennial stream: A perennial stream has flowing water year-round during a typical year. The water table is located above the stream bed for most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.

Practicable: Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

Pre-construction notification: A request submitted by the project proponent to the Corps for confirmation that a particular activity is authorized by nationwide permit. The request may be a permit application, letter, or similar document that includes information about the proposed work and its anticipated environmental effects. Pre-construction notification may be required by the terms and conditions of a nationwide permit, or by regional conditions. A pre-construction notification may be voluntarily submitted in cases where pre-construction notification is not required and the project proponent wants confirmation that the activity is authorized by nationwide permit.

Preservation: The removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.

Re-establishment: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning

natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area.

Rehabilitation: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.

Restoration: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: re-establishment and rehabilitation.

Riffle and pool complex: Riffle and pool complexes are special aquatic sites under the 404(b)(1) Guidelines. Riffle and pool complexes sometimes characterize steep gradient sections of streams. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a coarse substrate in riffles results in a rough flow, a turbulent surface, and high dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. A slower stream velocity, a streaming flow, a smooth surface, and a finer substrate characterize pools.

Riparian areas: Riparian areas are lands adjacent to streams, lakes, and estuarine-marine shorelines. Riparian areas are transitional between terrestrial and aquatic ecosystems, through which surface and subsurface hydrology connects waterbodies with their adjacent uplands. Riparian areas provide a variety of ecological functions and services and help improve or maintain local water quality. (See general condition 20.)

Shellfish seeding: The placement of shellfish seed and/or suitable substrate to increase shellfish production. Shellfish seed consists of immature individual shellfish or individual shellfish attached to shells or shell fragments (i.e., spat on shell). Suitable substrate may consist of shellfish shells, shell fragments, or other appropriate materials placed into waters for shellfish habitat.

Single and complete project: The term "single and complete project" is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. A single and complete project must have independent utility (see definition). For linear projects, a "single and complete project" is all crossings of a single water of the United States (i.e., a single waterbody) at a specific location. For linear projects crossing a single waterbody several times at separate and distant locations, each crossing is considered a single and complete project. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately.

Stormwater management: Stormwater management is the mechanism for controlling stormwater runoff for the purposes of reducing downstream erosion, water quality degradation, and flooding and mitigating the adverse effects of changes in land use on the aquatic environment.

Stormwater management facilities: Stormwater management facilities are those facilities, including but not limited to,

stormwater retention and detention ponds and best management practices, which retain water for a period of time to control runoff and/or improve the quality (i.e., by reducing the concentration of nutrients, sediments, hazardous substances and other pollutants) of stormwater runoff.

Stream bed: The substrate of the stream channel between the ordinary high water marks. The substrate may be bedrock or inorganic particles that range in size from clay to boulders. Wetlands contiguous to the stream bed, but outside of the ordinary high water marks, are not considered part of the stream bed.

Stream channelization: The manipulation of a stream's course, condition, capacity, or location that causes more than minimal interruption of normal stream processes. A channelized stream remains a water of the United States.

Structure: An object that is arranged in a definite pattern of organization. Examples of structures include, without limitation, any pier, boat dock, boat ramp, wharf, dolphin, weir, boom, breakwater, bulkhead, revetment, riprap, jetty, artificial island, artificial reef, permanent mooring structure, power transmission line, permanently moored floating vessel, piling, aid to navigation, or any other manmade obstacle or obstruction.

Tidal wetland: A tidal wetland is a wetland (i.e., water of the United States) that is inundated by tidal waters. The definitions of a wetland and tidal waters can be found at 33 CFR 328.3(b) and 33 CFR 328.3(f), respectively. Tidal waters rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by other waters, wind, or other effects. Tidal wetlands are located channelward of the high tide line, which is defined at 33 CFR 328.3(d).

Vegetated shallows: Vegetated shallows are special aquatic sites under the 404(b)(1) Guidelines. They are areas that are permanently inundated and under normal circumstances have rooted aquatic vegetation, such as seagrasses in marine and estuarine systems and a variety of vascular rooted plants in freshwater systems.

Waterbody: For purposes of the NWP, a waterbody is a jurisdictional water of the United States that, during a year with normal patterns of precipitation, has water flowing or standing above ground to the extent that an ordinary high water mark (OHWM) or other indicators of jurisdiction can be determined, as well as any wetland area (see 33 CFR 328.3(b)). If a jurisdictional wetland is adjacent--meaning bordering, contiguous, or neighboring--to a jurisdictional waterbody displaying an OHWM or other indicators of jurisdiction, that waterbody and its adjacent wetlands are considered together as a single aquatic unit (see 33 CFR 328.4(c)(2)). Examples of "waterbodies" include streams, rivers, lakes, ponds, and wetlands.